

حمل الآن

مجاناً وحصرياً

# المراجعة رقم (1)

## اختبار شهر ابريل



## Important questions on unit three from educational directorate exams



### First multiple choice questions

- 1 The side length of a rhombus is 8 cm. , and its height is 3 cm. , then its area = .....  $\text{cm}^2$  *(West Zagazig - Sharkia 25)*  
(a) 12 (b) 24 (c) 16 (d) 38
- 
- 2 The perimeter of a rhombus is 28 cm. , and its height is 5 cm. , then its area = .....  $\text{cm}^2$  *(Al Qusiya - Assiut 25)*  
(a) 17.5 (b) 35 (c) 33 (d) 70
- 
- 3 The diagonal lengths of a rhombus are 8 cm. , 10 cm. , then its area = .....  $\text{cm}^2$  *(Kerdasa - Giza 25 / Khosous - Qalyubia 25 / Quesna - Menoufia 25)*  
(a) 80 (b) 40 (c) 20 (d) 70
- 
- 4 The area of a rhombus is 72 square inches and the length of one of its diagonals is 8 inches , then the length of its other diagonal = ..... inches. *(West Tanta - Gharbia 25)*  
(a) 10 (b) 80 (c) 8 (d) 18
- 
- 5 If the area of a rhombus is 100 square units , then the product of the lengths of the two diagonals = ..... *(Assiut - Assiut 25 / Qutur - Gharbia 25)*  
(a) 200 (b) 100 (c) 50 (d) 25
- 
- 6 The lengths of the diagonals rhombus are  $2x$  ,  $4x$  units of length , then the algebraic expression representing its area equals ..... square units. *(Dekernes - Dakahlia 25)*  
(a)  $8x^2$  (b)  $2x^2$  (c)  $4x^2$  (d)  $4x$
- 
- 7 The area of a square is  $25 \text{ cm}^2$  , then its perimeter equals ..... cm. *(Belbeis - Sharkia 25)*  
(a) 20 (b) 25 (c) 50 (d) 100
- 
- 8 The length of a diagonal of a square is 12 cm. , then its area = .....  $\text{cm}^2$  *(Central Cairo - Cairo 25 / Hurghada - Red Sea 25)*  
(a) 72 (b) 27 (c) 144 (d) 12

**9** The area of a square is 50 square units has a diagonal length of ..... units of length.

(North Giza - Giza 25 / Sinnuris - Faiyum 25 / Tama - Sohag 25)

- (a) 25                      (b) 12.5                      (c) 10                      (d) 5
- 

**10** The area of a square with a diagonal length of 12 cm. .... the area of a rhombus with diagonal lengths 6 cm. , 12 cm.

(Kom Hamada - Beheira 25)

- (a)  $\leq$                       (b) =                      (c) <                      (d) >
- 

**11** A trapezium with parallel base lengths 16 feet , 12 feet , then the length of its middle base equals ..... feet.

(East Shubra Al-Khaimah - Qalyubia 25)

- (a) 192                      (b) 96                      (c) 28                      (d) 14
- 

**12** A trapezium with a height of 3 cm. and a middle base of length 10 cm. , then its area = ..... square centimeters.

(Montaza - Alexandria 25 / Abu Homos - Beheira 25 / West Faiyum - Faiyum 25)

- (a) 7.5                      (b) 15                      (c) 30                      (d) 60
- 

**13** A trapezium with a height of 5.4 cm. and parallel bases of lengths 8 cm. , 10 cm. , then its area = .....  $\text{cm}^2$

(Al-Zayniyah - Luxor 25)

- (a) 48.6                      (b) 54                      (c) 97.2                      (d) 4.32
- 

**14** A trapezium where the sum of the lengths of its two parallel bases equals 14 cm. and its height equals 6 cm. , then its area = .....  $\text{cm}^2$

(Kafr Shukr - Qalyubia 25)

- (a) 20                      (b) 42                      (c) 84                      (d) 164
- 

**15** A trapezium with an area of 45 square meters and a middle base length of 9 meters , then its height = ..... meters.

(Hurghada - Red Sea 25)

- (a) 6                      (b) 5                      (c) 405                      (d) 9
- 

**16** The area of a trapezium is 60 square meters and its height is 5 meters , then the length of its middle base equals ..... meters.

(Samannoud - Gharbia 25)

- (a) 300                      (b) 60                      (c) 12                      (d) 5
- 

**17** The trapezium which has an area of  $175 \text{ m}^2$  and parallel base lengths 14 m , 21 m , its height is ..... m

(Dekernes - Dakahlia 25)

- (a) 20                      (b) 15                      (c) 10                      (d) 5

- 18** The area of a square piece of land with a diagonal length of 12 m equals the area of a piece of land in the shape of a trapezium whose middle base length equals 18 m , then the height of the trapezium is ..... m (Khosous - Qalyubia 25)

(a) 8                                      (b) 7                                      (c) 16                                      (d) 4

- 19** A trapezium with an area of  $48 \text{ cm}^2$  and the ratio between its middle base length and its height equals 3 : 4 , then the difference between them equals ..... cm.

(Tala - Menoufia 25)

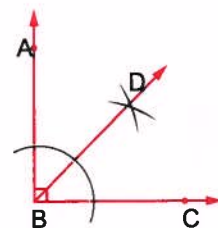
(a) 8                                      (b) 6                                      (c) 4                                      (d) 2

- 20** In the given figure :

When bisecting  $\angle ABC$  with a compass  
 $m(\angle ABD) = \dots\dots\dots$

(Hawamdia - Giza 25)

(a)  $35^\circ$                                       (b)  $45^\circ$   
(c)  $90^\circ$                                       (d)  $180^\circ$



- 21** The image of the point (2 , 5) by reflection in the X-axis is .....

(Badr - Cairo 25 / Kerdasa - Giza 25)

(a) (5 , 2)                                      (b) (2 , - 5)                                      (c) (- 2 , - 5)                                      (d) (- 2 , 5)

- 22** The image of the point (4 , 0) by reflection in the y-axis is .....

(Kafr Shukr - Qalyubia 25)

(a) (4 , 0)                                      (b) (- 4 , 0)                                      (c) (0 , 4)                                      (d) (0 , - 4)

- 23** The image of the point (3 , - 5) by reflection in the X-axis is .....

(Sheikh Zayed - Giza 25)

(a) (3 , 5)                                      (b) (- 3 , 5)                                      (c) (3 , - 5)                                      (d) (- 3 , - 5)

- 24** The image of the point (4 , - 1) by reflection in the y-axis is .....

(Khosous - Qalyubia 25)

(a) (- 1 , 4)                                      (b) (4 , 1)                                      (c) (- 4 , - 1)                                      (d) (- 1 , - 4)

- 25** What is the image of the point (- 2 , 4) by reflection in the X-axis ? (Tel El-Kebir - Ismailia 25)

(a) (- 2 , - 4)                                      (b) (2 , 4)                                      (c) (- 4 , 2)                                      (d) (4 , 2)

- 26** Which of the following is the image of the point (- 2 , - 5) by reflection in the y-axis ?

(Basyoun - Gharbia 25)

(a) (2 , 5)                                      (b) (2 , - 5)                                      (c) (- 2 , 5)                                      (d) (- 5 , - 2)



- 27** The image of the point  $(1, -2)$  by reflection in the  $X$ -axis followed by reflection in the  $y$ -axis is ..... *(Central - Alexandria 25)*  
 (a)  $(-1, 2)$  (b)  $(2, -1)$  (c)  $(-1, -2)$  (d)  $(1, 2)$
- 
- 28** Which of the following is the image of the point  $(-3, 0)$  by reflection in the  $X$ -axis followed by reflection in the  $X$ -axis again? *(Naqada - Qena 25)*  
 (a)  $(3, 0)$  (b)  $(-3, 0)$  (c)  $(0, 3)$  (d)  $(0, -3)$
- 
- 29** If the image of the point  $(X + 7, X - 6)$  by reflection in the  $X$ -axis is itself, then the value of  $X$  equals ..... *(Tala - Menoufia 25)*  
 (a) 6 (b)  $-7$  (c)  $-6$  (d) 7
- 
- 30** If the point  $(k + 3, m - 6)$  is itself by reflection in the  $X$ -axis and  $y$ -axis, then  $k + m =$  ..... *(El-Gamaliya - Dakahlia 25)*  
 (a) 3 (b)  $-4$  (c)  $-1$  (d) 7
- 
- 31** If  $\hat{A}$  is the image of point  $A$  by reflection in the  $X$ -axis and point  $A$  lies in the third quadrant, in which quadrant does point  $\hat{A}$  lie? *(Al-Rawda - Damietta 25)*  
 (a) First (b) Second (c) Third (d) Fourth
- 
- 32** The image of the point  $(-1, -2)$  by translation  $(-4, 1)$  is ..... *(Central - Alexandria 25)*  
 (a)  $(5, -1)$  (b)  $(-5, -1)$  (c)  $(-1, -5)$  (d)  $(5, 1)$
- 
- 33** The image of the point  $(3, -2)$  by translation  $(X, y) \longrightarrow (X - 4, y + 3)$  is ..... *(Al Qusiya - Assiut 25)*  
 (a)  $(1, 1)$  (b)  $(-1, -1)$  (c)  $(-1, 1)$  (d)  $(1, -1)$
- 
- 34** The image of the point  $(3, -2)$  by translation  $(-3, 2)$  is ..... *(East Mahalla - Gharbia 25)*  
 (a)  $(-1, -1)$  (b)  $(0, 1)$  (c)  $(0, -2)$  (d)  $(0, 0)$
- 
- 35** The image of the point  $(0, -4)$  by translation  $(-2, 1)$  is ..... *(Kafr Shukr - Qalyubia 25)*  
 (a)  $(-2, -5)$  (b)  $(-2, -3)$  (c)  $(-2, 3)$  (d)  $(-2, 5)$
- 
- 36** What is the image of the point  $(2, 1)$  by translation  $(X, y) \longrightarrow (X + 1, y - 2)$ ? *(Warraq - Giza 25)*  
 (a)  $(3, 1)$  (b)  $(3, -3)$  (c)  $(3, -1)$  (d)  $(-1, 3)$

- 37** The image of the point  $(0, -5)$  by translation  $(X, y) \longrightarrow (X - 2, y + 1)$  is ..... *(Banha - Qalyubia 25)*  
 (a)  $(-2, -4)$  (b)  $(-2, 4)$  (c)  $(0, 5)$  (d)  $(-2, -6)$
- 
- 38** The translation that makes the point  $(-4, 2)$  is the image of the point  $(1, -3)$  is ..... *(Shebin El Kom - Menoufia 25)*  
 (a)  $(-5, 5)$  (b)  $(-5, -1)$  (c)  $(3, -5)$  (d)  $(5, -5)$
- 
- 39** The image of the point  $(1, 5)$  by a translation of 3 units in the positive direction of the y-axis is ..... *(West Tanta - Gharbia 25)*  
 (a)  $(1, 8)$  (b)  $(4, 5)$  (c)  $(1, 2)$  (d)  $(4, 8)$
- 
- 40** The image of the point  $(2, -3)$  by a translation of 3 units upwards is ..... *(Obour - Qalyubia 25 / West Zagazig - Sharkia 25 / Ibsaway - Faiyum 25)*  
 (a)  $(5, -3)$  (b)  $(2, -6)$  (c)  $(2, 0)$  (d)  $(5, 0)$
- 
- 41** The image of the point  $(2, 3)$  by a translation of 4 units to the left is ..... *(Minya - Minya 25)*  
 (a)  $(-2, 3)$  (b)  $(-2, -3)$  (c)  $(2, 1)$  (d)  $(6, 3)$
- 
- 42** The geometric transformation that make the point  $\hat{A}(5, 3)$  is the image of the point  $A(1, 1)$  is ..... *(El Badari - Assiut 25)*  
 (a) reflection in the X-axis  
 (b) reflection in the y-axis  
 (c) translation  $(X, y) \longrightarrow (X + 4, y + 2)$   
 (d) translation  $(X, y) \longrightarrow (X - 4, y - 2)$
- 
- 43** The image of the point  $(-2, -3)$  by translation  $(0, 2)$  followed by translation  $(-1, 0)$  is ..... *(El-Gamaliya - Dakahlia 25)*  
 (a)  $(2, 2)$  (b)  $(-2, -2)$  (c)  $(4, 3)$  (d)  $(-3, -1)$
- 
- 44** The image of the point  $(-1, 1)$  by translation  $(4, -1)$  followed by translation  $(2, -2)$  is ..... *(Central - Alexandria 25)*  
 (a)  $(-2, 5)$  (b)  $(-5, 2)$  (c)  $(5, -2)$  (d)  $(3, 0)$
- 
- 45** The image of the point  $(3, 2)$  by a translation of 3 units downwards followed by a translation of 4 units to the right is ..... *(Talkha - Dakahlia 25 / Qift - Qena 25)*  
 (a)  $(0, 6)$  (b)  $(6, 0)$  (c)  $(7, -1)$  (d)  $(-1, -1)$

- 46** The identity rotation around the origin point is has an angle of measure .....  
(Kafr Saqr - Sharkia 25)  
(a)  $90^\circ$  (b)  $180^\circ$  (c)  $270^\circ$  (d)  $360^\circ$
- 
- 47** The image of the point  $(3, -4)$  by rotation  $R(O, 360^\circ)$  is .....  
(Bulaq Al-Dakrour - Giza 25)  
(a)  $(4, 3)$  (b)  $(0, 4)$  (c)  $(3, 4)$  (d)  $(3, -4)$
- 
- 48** The image of the point  $(-4, 5)$  by rotation  $R(O, 90^\circ)$  is ..... (Rashid - Beheira 25)  
(a)  $(5, 4)$  (b)  $(-5, -4)$  (c)  $(-4, -5)$  (d)  $(4, -5)$
- 
- 49** The image of the point  $(-1, 5)$  by rotation  $R(O, 90^\circ)$  is ..... (Central - Alexandria 25)  
(a)  $(5, -1)$  (b)  $(1, -5)$  (c)  $(-5, -1)$  (d)  $(5, 1)$
- 
- 50** The image of the point  $(2, -6)$  by rotation  $R(O, -90^\circ)$  is the point .....  
(Banha - Qalyubia 25)  
(a)  $(6, 2)$  (b)  $(-2, -6)$  (c)  $(2, 6)$  (d)  $(-6, -2)$
- 
- 51** The image of the point  $(-4, 2)$  by rotation around the origin point O by an angle of measure  $180^\circ$  anti-clockwise is .....  
(West Shubra Al Khaimah - Qalyubia 25)  
(a)  $(4, -2)$  (b)  $(4, 2)$  (c)  $(-2, 4)$  (d)  $(-2, -4)$
- 
- 52** The image of the point  $(-2, -3)$  by rotation around the origin point by an angle of measure  $90^\circ$  in the clockwise direction is .....  
(Bani Ebeid - Dakahlia 25)  
(a)  $(3, -2)$  (b)  $(2, 3)$  (c)  $(3, 2)$  (d)  $(-3, 2)$
- 
- 53** What is the geometric transformation equivalent to a reflection in the X-axis followed by a reflection in the y-axis? (Abnoub - Assiut 25)  
(a)  $R(O, 90^\circ)$  (b)  $R(O, 180^\circ)$   
(c)  $R(O, 270^\circ)$  (d)  $R(O, 360^\circ)$
- 
- 54** What is the rotation that makes the image of point A  $(2, 5)$  be  $\hat{A}(-5, 2)$ ? (Shubra - Cairo 25)  
(a)  $R(O, 180^\circ)$  (b)  $R(O, 90^\circ)$   
(c)  $R(O, -90^\circ)$  (d)  $R(O, 360^\circ)$

**55** The image of the point  $(-1, 0)$  by rotation  $R(O, 90^\circ)$  followed by rotation  $R(O, -90^\circ)$  is .....

(East Mahalla - Gharbia 25)

- (a)  $(1, 0)$                       (b)  $(0, 1)$                       (c)  $(0, -1)$                       (d)  $(-1, 0)$

**56** What is the image of the point  $(-2, 4)$  by rotation  $R(O, 90^\circ)$  followed by rotation  $R(O, 180^\circ)$  ?

(Inspection - Sohag 25)

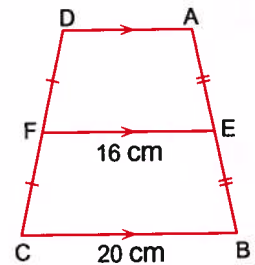
- (a)  $(-4, -2)$                       (b)  $(4, -2)$                       (c)  $(-4, 2)$                       (d)  $(4, 2)$

## Second Essay questions

**1** In the given figure :

ABCD is a trapezium.

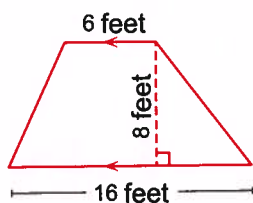
Find the length of  $\overline{AD}$



(Matay - Minya 25)

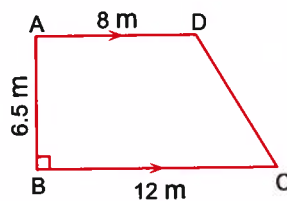
**2** Find the area of each of the following figures :

①



(Belbes - Sharkia 25)

②



(Shubra - Cairo 25)

**3** Find the area of each of the following figures :

① A rhombus with diagonal lengths 10 cm , 15 cm.

(Ayat - Giza 25)

② A rhombus with diagonal lengths 7 meters , 10 meters.

(Fuqous - Sharkia 25)

③ A square with a diagonal length of 6 cm.

(Kerdasa - Giza 25)

④ A trapezium with parallel base lengths 12 cm , 8 cm and its height is 5 cm.

(Shorouk - Cairo 25)

⑤ A trapezium with a height of 5 cm and a middle base length of 8 cm.

(Bani Mazar - Minya 25)

⑥ A trapezium with parallel base lengths 7 cm , 9 cm and its height is 5 cm.

*(Matariya - Cairo 25 / Sheikh Zayed - Giza 25 / Itsa - Faiyum 25)*

⑦ A square with a diagonal length of  $(3x + 3)$  units of length. *(Salhia El Gedida - Sharkia 25)*

4 A square with a diagonal length of  $10x$  cm , calculate its area in terms of  $x$  , then find the numerical value of the area at  $x = 2$   
*(Al Husseinia - Sharkia 25)*

5 Which is larger in area : a square with a diagonal length of 10 cm. or a rhombus with diagonal lengths 12 cm. , 10 cm. ?  
*(Inspection - Port Said 25)*

6 The lengths of the diagonals of a rhombus are 6 cm. , 10 cm. and a square with a diagonal length of 8 cm. , find the sum of their areas.  
*(Hawamdia - Giza 25)*

7 The area of a rhombus is  $20 \text{ cm}^2$  and the length of one of its diagonals is 5 cm. , find the length of the other diagonal.  
*(Montaza - Alexandria 25)*

8 The length of the side of a rhombus is 15 cm. and its diagonal lengths are 18 cm. , 24 cm. , find its height.  
*(Armant - Luxor 25)*

9 Find the length of the diagonal of a square whose area equals the area of a rhombus with diagonal lengths 4 cm. , 16 cm.  
*(Samannoud - Gharbia 25)*

10 The area of a rhombus equals the area of a square with a diagonal length of 12 cm. , and the length of one of its diagonals is 16 cm , find the length of the other diagonal.  
*(Rashid - Beheira 25)*

11 The area of a trapezium is  $45 \text{ cm}^2$  and its height of 5 cm. , find the length of its middle base.  
*(Al Wasta - Beni Suef 25)*

12 The area of a trapezium is  $525 \text{ m}^2$  and its parallel base lengths are 14 m. , 21 m. , find its height.  
*(East Mahalla - Gharbia 25)*

13 A trapezium with an area of  $150 \text{ cm}^2$  and the length of one of its bases is 17 cm. and its height is 10 cm. Calculate the length of the other base.  
*(Abnoub - Assiut 25)*

14 Draw  $\overline{AB}$  of length 6 cm. then bisect it using a ruler and compass. **(Do not erase the arcs)**

*(Aga - Dakahlia 25 / Itsa - Faiyum 25 / Qift - Qena 25 / Hurghada - Red Sea 25)*



- 15 Draw an angle of measure  $100^\circ$  , then bisect this angle using a ruler and compass.  
(Do not erase the arcs) (Abnoub - Assiut 25)
- 
- 16 Using geometric instruments draw  $\triangle ABC$  in which the : length of  $\overline{AB}$  equals 5 cm.  
 ,  $m(\angle A) = 60^\circ$  ,  $m(\angle B) = 50^\circ$  , then determine by measurement the type of triangle  
 according to its side lengths. (New Cairo - Cairo 25)
- 
- 17 Draw  $\triangle ABC$  in which the length of  $\overline{AB}$  equals 6 cm , the length of  $\overline{AC}$  equals 5 cm  
 ,  $m(\angle A) = 70^\circ$  (Obour - Qalyubia 25)
- 
- 18 Draw  $\triangle ABC$  in which  $AB = 7$  cm. ,  $AC = 3$  cm. ,  $BC = 5$  cm. , then determine by  
 measurement the type of the triangle according to its angle measures. (Do not erase the arcs)  
 (Al Qusiya - Assiut 25)
- 
- 19 Draw  $\triangle ABC$  in which  $AB = 5$  cm ,  $BC = 6$  cm ,  $AC = 8$  cm. , then bisect  $\angle B$  using  
 geometric instruments (ruler and compass). (Qutur - Gharbia 25)
- 
- 20 Draw in the coordinate plane the triangle ABC where  $A(3, 2)$  ,  $B(0, 2)$  ,  $C(-3, 0)$  ,  
 then draw its image by reflection in the X-axis (Kafr Saad - Damietta 25)
- 
- 21 Draw on the a square grid  $\overline{AB}$  where  $A(3, 0)$  ,  $B(0, 2)$  then draw its image by reflection  
 in the y-axis (East Mansoura - Dakahlia 25)
- 
- 22 Locate in the coordinate plane the points  $A(2, 1)$  ,  $B(2, 5)$  ,  $C(4, 5)$  ,  $D(4, 1)$  , then  
 draw the image of the figure ABCD by reflection in the y-axis (Al Qusiya - Assiut 25)
- 
- 23 Draw  $\overline{AB}$  where  $A(-4, 2)$  ,  $B(-1, 1)$  , then draw its image by reflection in the X-axis  
 followed by reflection in the y-axis (West Tanta - Gharbia 25)
- 
- 24 Draw on a square grid the triangle whose vertices are  $A(-1, 6)$  ,  $B(4, 3)$  ,  $C(1, 0)$   
 , then draw its image by reflection in the y-axis followed by reflection in the X-axis  
 (Manfalut - Assiut 25)
- 
- 25 Draw  $\triangle ABC$  where  $A(3, 1)$  ,  $B(3, 4)$  ,  $C(1, -2)$  , then draw its image by translation  
  $(X, y) \longrightarrow (X + 1, y - 2)$  (Agouza - Giza 25)
- 
- 26 Draw  $\triangle ABC$  where  $A(-3, -3)$  ,  $B(-4, 0)$  ,  $C(0, 0)$  then draw its image by  
 translation  $(-1, 3)$  (Mokattam - Cairo 25)
- 
- 27 Draw the triangle ABC in which  $A(0, -2)$  ,  $B(-4, 1)$  ,  $C(-3, -4)$  , then draw its  
 image by rotation  $R(O, 90^\circ)$  (El Gamaliya - Dakahlia 25)

- 28** On a square grid draw  $\Delta ABC$  where  $A(-4, 1)$ ,  $B(-1, 1)$ ,  $C(2, 3)$ , then draw its image by rotation around the origin point  $O$  in the clockwise direction through an angle of measure  $90^\circ$

*(East Shubra Al Khaimah - Qalyubia 25)*

- 29** Draw the triangle  $ABC$  on a square grid where  $A(-4, 1)$ ,  $B(-1, 1)$ ,  $C(-2, 3)$  then draw its image by rotation  $R(O, 180^\circ)$

*(Qutur - Gharbia 25)*

- 30** On a square grid draw the quadrilateral  $ABCD$  in which  $A(1, 1)$ ,  $B(3, 1)$ ,  $C(3, 6)$ ,  $D(1, 6)$  then draw its image by rotation  $R(O, 90^\circ)$

*(Tel El Kebir - Ismailia 25)*

- 31** Draw the image of each of the two points  $A(2, 3)$ ,  $B(-1, 0)$  by rotation  $R(O, 90^\circ)$  followed by rotation  $R(O, 180^\circ)$

*(Qanater Al Khayriya - Qalyubia 25)*

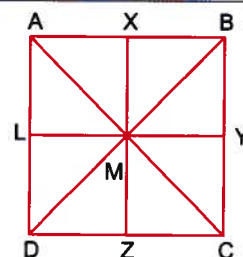
- 32** Draw  $\Delta ABC$  in the coordinate plane where  $A(-4, 1)$ ,  $B(-1, 1)$ ,  $C(-2, 3)$ , then draw its image by rotation  $R(O, 90^\circ)$  followed by rotation  $R(O, 180^\circ)$

*(Al Rawda - Damietta 25)*

- 33** In the given figure :

$ABCD$  is a square.

Find the image of the triangle  $MBX$  by rotation  $R(M, 90^\circ)$



*(Khosous - Qalyubia 25)*

**1 Choose the correct answer from the given ones :**

- 1** In an experiment of tossing a fair coin three consecutive times, what is the number of elements in the sample space?  
 (a) 2 (b) 4 (c) 6 (d) 8
- 2** Drawing a coloured ball from a box containing identical balls of unknown colours :  
 (a) Random experiment. (b) Not a random experiment.  
 (c) Impossible event. (d) Certain event.
- 3** In an experiment of tossing a fair die once, which of the following events is a simple event ?  
 (a) Event of rolling an even number. (b) Event of rolling a prime odd number.  
 (c) Event of rolling a number divisible by 5 (d) Event of rolling a number divisible by 3
- 4** The image of the point  $(-6, 6)$  by translation  $(x, y) \longrightarrow (x - 1, y + 2)$  is .....  
 (a)  $(-4, 5)$  (b)  $(-5, 4)$  (c)  $(-5, 8)$  (d)  $(-7, 8)$
- 5**  $\sqrt{x^4} = \sqrt[3]{\dots\dots\dots}$   
 (a)  $x^4$  (b)  $x^6$  (c)  $x^8$  (d)  $\pm x$

**2 A bag contains 20 identical cards numbered from 1 to 20. One card is drawn randomly , and the number on the drawn card is recorded. Write each of the following events :**

- 1** Event (A) is the event of drawing a number divisible by 6  
**2** Event (B) is the event of drawing an odd number that is a multiple of 5  
**3** Event (C) is the event of drawing a perfect square number.  
**4** Event (D) is the event of drawing a number that satisfies the inequality  $x \geq 12$

**3 In an experiment of tossing a fair coin twice successively and observing the sequence of appearances of heads and tails , write the sample space (S) and then express each of the following events :**

- 1** Event (A) is the event of "appearance of a head on the first toss".  
**2** Event (B) is the event of "appearance of the same outcome on both tosses".  
**3** Event (C) is the event of "appearance of a head on only one of the two tosses".

**4 Which has a greater area ?**

A square with a diagonal length of 12 cm or a trapezium with the lengths of its parallel bases are 6 cm and 10 cm and its height 6 cm.

# April tests



## Test

1

Total mark

15

1 Choose the correct answer from the given ones :

1 Which of the following is the image of the point  $(5, 0)$  by rotation  $R(O, 90^\circ)$  ?

- (a)  $(5, 0)$       (b)  $(-5, 0)$       (c)  $(0, 5)$       (d)  $(0, -5)$

2 The length of the middle base in a trapezium is equal to 15 feet and its height is 8 feet. What is its area ?

- (a) 60 square feet.      (b) 120 square feet  
(c) 240 square feet.      (d) 23 square feet.

3 Which translation makes the point  $\hat{A}(-2, 1)$  is the image of the point  $A(4, -5)$  ?

- (a)  $(-6, 6)$       (b)  $(-6, -4)$       (c)  $(2, -4)$       (d)  $(6, -6)$

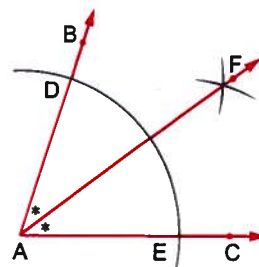
4 What is the image of the point  $(a, b)$  by reflection in the y-axis ?

- (a)  $(a, -b)$       (b)  $(-a, b)$       (c)  $(b, -a)$       (d)  $(-b, a)$

5 In the opposite figure :

When bisecting  $\angle BAC$  with a compass makes ,  
you find that :  $m(\angle BAF) = \dots\dots\dots$

- (a)  $m(\angle BFA)$       (b)  $m(\angle EAF)$   
(c)  $m(\angle EFA)$       (d)  $m(\angle BAC)$

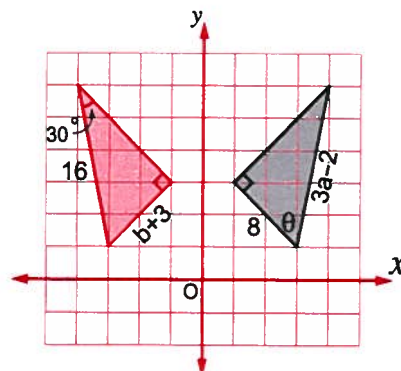


2 Answer the following questions :

1 In the opposite figure :

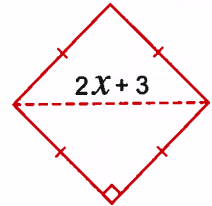
If one triangle is  
the image of the other  
triangle by reflection in  
the y-axis

Find the value of each of :  $a, b, \theta$



2 Draw the triangle  $ABC$  with vertices  $A(-2, 3)$ ,  $B(1, 4)$ , and  $C(0, 6)$ , then find its image by translation  $(X, y) \longrightarrow (X + 2, y - 1)$

- 3 If the area of a rhombus is 120 square centimeters and the length of one of its diagonals is 10 cm, then find the length of the other diagonal.
- 4 Find the area of the opposite square in terms of  $x$ , then find the numerical value of the area when  $x = 3$

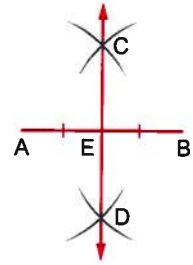


- 5 Draw  $\triangle ABC$  where  $AB = 6$  cm,  $m(\angle A) = 90^\circ$ , and  $m(\angle B) = 45^\circ$ , then bisect  $\angle A$  with the bisector  $\overrightarrow{AD}$  which intersects  $\overline{BC}$  at point D. Determine the type of the triangle ABD according to the lengths of its sides.

## 1 Choose the correct answer from the given ones :

- 1 When bisecting the line segment  $\overline{AB}$  by a compass ,  
you must have .....

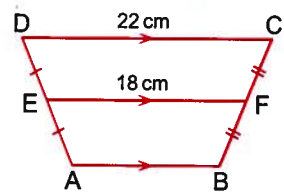
- (a)  $AC < \frac{1}{2} AB$  (b)  $AC < AD$   
(c)  $AC > \frac{1}{2} AB$  (d)  $AC < AE$



## 2 In the opposite figure :

What is the length of  $\overline{AB}$  ?

- (a) 14 cm. (b) 20 cm.  
(c) 26 cm. (d) 28 cm.



- 3 The product of the length of two diagonals of a square is 16 square meters.  
What is its area in square meters?

- (a) 4 (b) 8 (c) 32 (d) 128

- 4 What is the point whose image by rotation  $R(O, 180^\circ)$  is  $(-3, 1)$  ?

- (a)  $(3, 1)$  (b)  $(1, 3)$  (c)  $(-1, 3)$  (d)  $(3, -1)$

- 5 What is the image of the point  $(-1, 4)$  translation 1 unit upwards followed by  
a translation 4 units downwards ?

- (a)  $(0, 0)$  (b)  $(-2, 8)$  (c)  $(2, -8)$  (d)  $(-1, 1)$

## 2 Answer the following questions :

- 1 Find the area of the trapezium whose lengths of the two parallel bases are 7 cm and  
15 cm and its height is 8 cm.

- 2 If  $A(-2, 1)$ ,  $B(5, -3)$ , write the rule of the translation that makes :

(1) B is the image of A

(2) A is the image of B

- 3 Draw the square ABCD with vertices  $A(-1, 2)$ ,  $B(1, 0)$ ,  $C(3, 2)$  and  $D(1, 4)$ ,  
then draw its image by reflection in the  $X$ -axis.

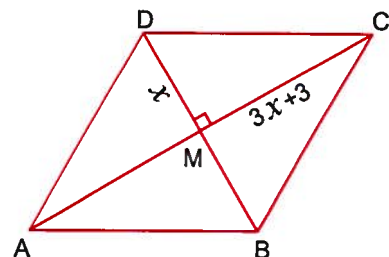
- 4 Draw the equilateral triangle ABC with each side of length 6 cm.

## 5 In the opposite figure :

ABCD is a rhombus its diagonals intersecting at M.

$$MD = x, MC = 3x + 3$$

Find the area of the rhombus in terms of  $x$ ,  
then calculate the numerical value of the area  
when  $x = 7$





# كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



حمل الآن

مجاناً وحصرياً

# المراجعة رقم (2)

## اختبار شهر ابريل



## 1- Choose the correct answer:

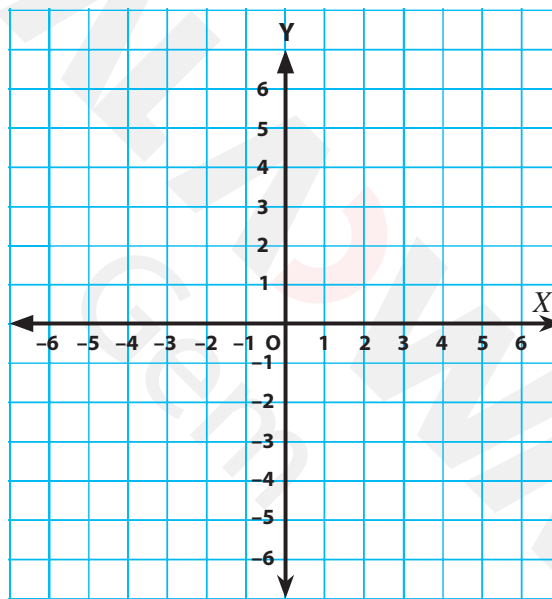
2

- a The image of the point  $(2, -1)$  by reflection in the Y-axis is .....  
 (  $(2, 1)$  ,  $(-2, 1)$  ,  $(2, -1)$  ,  $(-2, -1)$  )
- b A trapezium with area  $40 \text{ cm}^2$  and the length of one of its parallel bases is 4 cm and the length of its height is 8 cm, then the length of other base = ..... cm.  
 ( 6 , 12 , 10 , 8 )

## 2- Answer each of the following:

8

- a Draw  $\triangle ABC$ , where  $A(0, 2)$ ,  $B(-5, 0)$  and  $C(-3, -5)$ , then draw the image of  $\triangle ABC$  by a reflection in the y-axis.



.....

.....

.....

.....

- b** Draw the triangle ABC where:  $AB = 4$  cm,  $BC = 5$  cm and  $AC = 2$  cm, and determine the type of triangle according to measures of its angles.

---

---

---

---

- c** Draw  $\overline{AB}$  of length 6 cm, then bisect it using the ruler and compass.

---

---

---

---

---

---

- d** If the image of the point A by rotation around the origin by an angle of measure  $90^\circ$  is the point  $A'(-7, 0)$ , find the point A, then find the image of A' by rotation  $R(O, 180^\circ)$ .

---

---

---

---

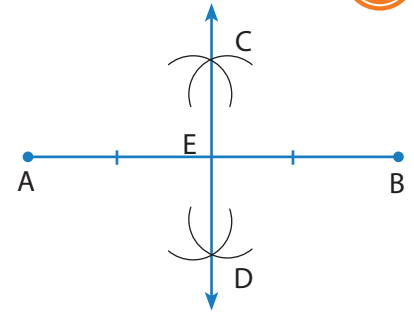
---

---

## 1- Choose the correct answer:

- a When bisecting  $\overline{AB}$  using compass, then  $AC$  .....

(  $< AE$  ,  $= \frac{1}{2} AB$  ,  $> \frac{1}{2} AB$  ,  $< \frac{1}{2} AB$  )



- b Which of the following points remains the same when reflected in the y-axis?

(  $(-3, 0)$  ,  $(0, 7)$  ,  $(3, 2)$  ,  $(2, -3)$  )

## 2- Answer each of the following:

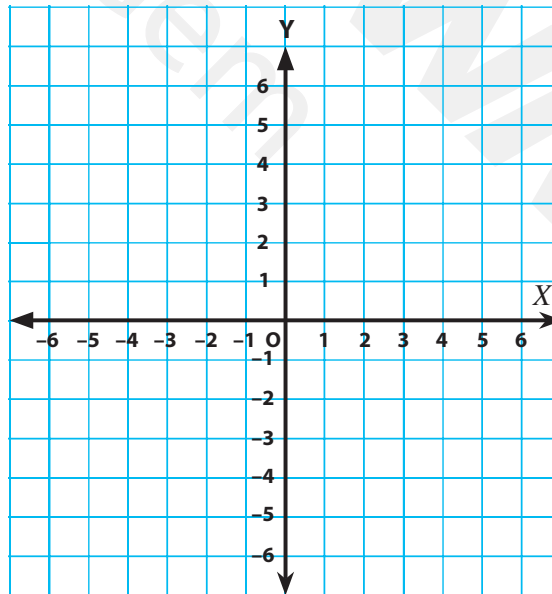
- a A trapezium has an area of  $500 \text{ cm}^2$ , a height of  $25 \text{ cm}$ , and the ratio between the lengths of its bases is  $2 : 3$ , what is the length of each base?

.....

.....

.....

- b Draw  $\overline{AB}$  in the coordinate plane, where  $A(2, 0)$ ,  $B(4, 3)$ , then draw its image under rotation  $R(O, 90^\circ)$



.....

.....

.....

- c Draw the triangle ABC, where  $AB = 4$  cm,  $AC = 6$  cm and  $m(\angle BAC) = 100^\circ$

.....

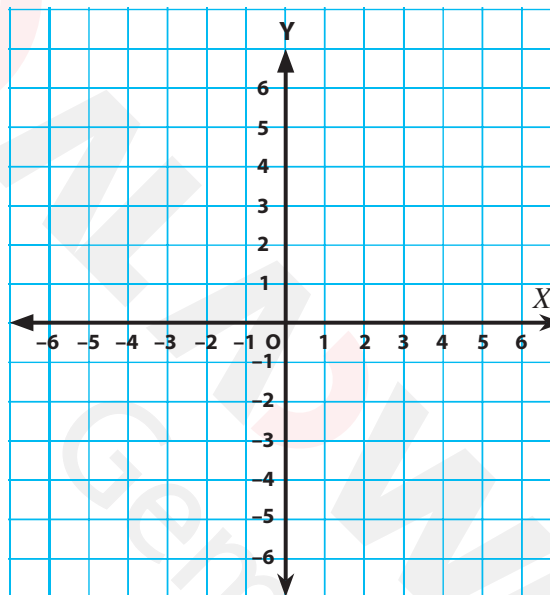
.....

.....

.....

.....

- d Draw  $\triangle OBC$  in the coordinate plane, where  $B(3, 0)$ ,  $C(0, 2)$ , then draw its image by translation  $(-4, 1)$



.....

.....

.....

.....

.....



## 1- Choose the correct answer:

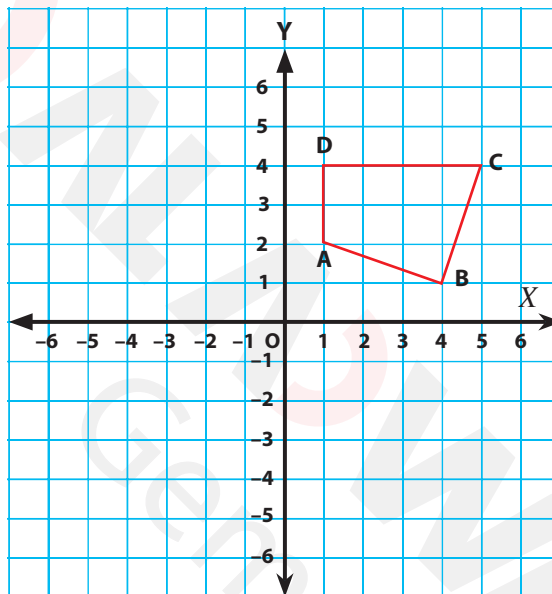
2

- a The image of the point  $(-7, 2)$  under rotation  $R(O, 180^\circ)$  is .....  
 $((-2, 7), (7, -2), (-7, -2), (-2, -7))$
- b The image of the point  $(5, 7)$  under rotation  $R(O, 90^\circ)$  followed by rotation  $(O, -90^\circ)$   
 is .....  
 $((-5, -7), (7, 5), (-5, 7), (5, 7))$

## 2- Answer each of the following:

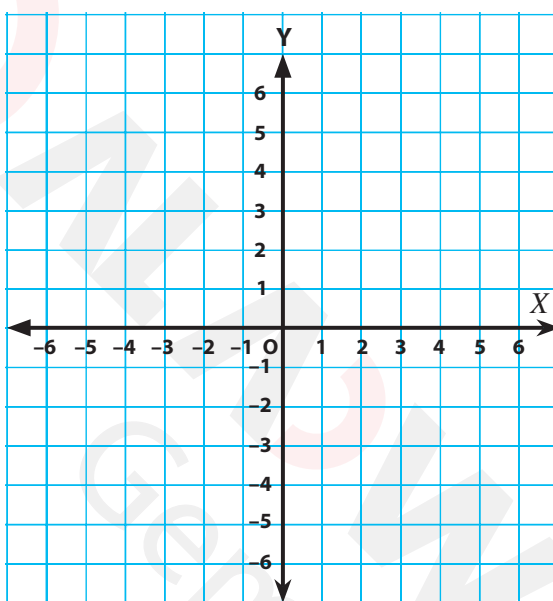
8

- a Draw the image of the quadrilateral ABCD by the translation  $(1, -2)$  followed by the translation  $(-6, 4)$ .



- b** A trapezium has an area of  $135 \text{ cm}^2$  and a height 9 cm, if the length of one of its bases is 10 cm. Find the length of its other base.

- c** Draw  $\overline{AB}$  in the coordinate plane, where A (1, 3), B (5, 2), then draw its image under rotation  $R(O, 180^\circ)$  followed by translation (1, 3).



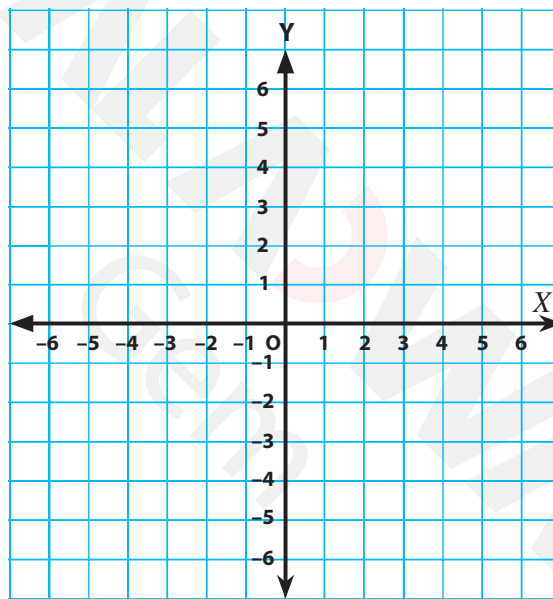
- d** Draw  $\angle ABC$  of measure  $100^\circ$ , then bisect it using the ruler and compass.

## 1- Choose the correct answer:

- a The image of the point  $(2, -1)$  by reflection in the Y-axis is .....  
 (  $(2, 1)$  ,  $(-2, 1)$  ,  $(2, -1)$  ,  $(-2, -1)$  )
- b A trapezium with area  $40 \text{ cm}^2$  and the length of one of its parallel bases is 4 cm and the length of its height is 8 cm, then the length of other base = ..... cm.  
 ( 6 , 12 , 10 , 8 )

## 2- Answer each of the following:

- a Draw  $\triangle ABC$ , where  $A(0, 2)$ ,  $B(-5, 0)$  and  $C(-3, -5)$ , then draw the image of  $\triangle ABC$  by a reflection in the y-axis.

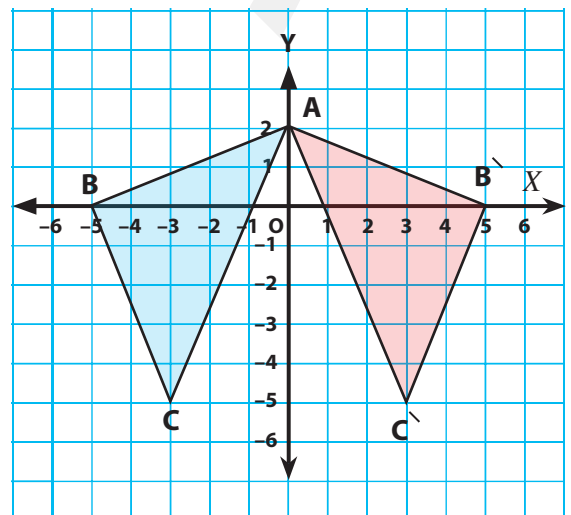


$$A(0, 2) \longrightarrow A(0, 2)$$

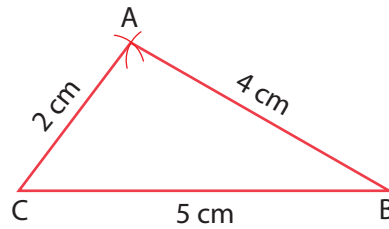
$$B(-5, 0) \longrightarrow B'(5, 0)$$

$$C(-3, -5) \longrightarrow C'(3, -5)$$

$\triangle A'B'C'$  is the image of  $\triangle ABC$  by reflection in the y-axis.

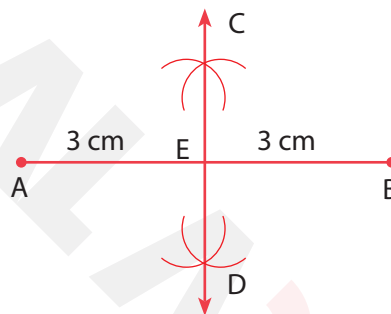


- b Draw the triangle ABC where:  $AB = 4$  cm,  $BC = 5$  cm and  $AC = 2$  cm, and determine the type of triangle according to measures of its angles.



The type of triangle is : Obtuse angled-triangle

- c Draw  $\overline{AB}$  of length 6 cm, then bisect it using the ruler and compass.



- d If the image of the point A by rotation around the origin by an angle of measure  $90^\circ$  is the point  $A'(-7, 0)$ , find the point A, then find the image of  $A'$  by rotation  $R(O, 180^\circ)$ .

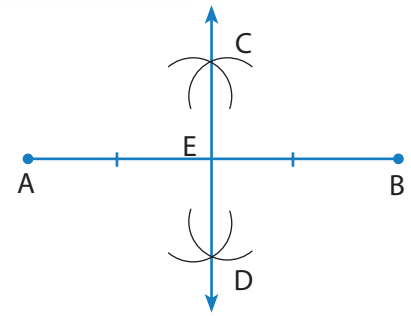
$$A(x, y) \xrightarrow{R(O, 90^\circ)} A'(-7, 0), \text{ then } A(0, 7)$$

$$A'(-7, 0) \xrightarrow{R(O, 180^\circ)} A''(7, 0)$$

## 1- Choose the correct answer:

- a When bisecting  $\overline{AB}$  using compass, then AC .....

(  $< AE$  ,  $= \frac{1}{2} AB$  ,  $> \frac{1}{2} AB$  ,  $< \frac{1}{2} AB$  )



- b Which of the following points remains the same when reflected in the y-axis?

(  $(-3, 0)$  ,  $(0, 7)$  ,  $(3, 2)$  ,  $(2, -3)$  )

## 2- Answer each of the following:

- a A trapezium has an area of  $500 \text{ cm}^2$ , a height of  $25 \text{ cm}$ , and the ratio between the lengths of its bases is  $2 : 3$ , what is the length of each base?

$$\text{Middle base} = \frac{500}{25} = 20 \text{ cm}$$

First base : second base : sum

2 : 3 : 5

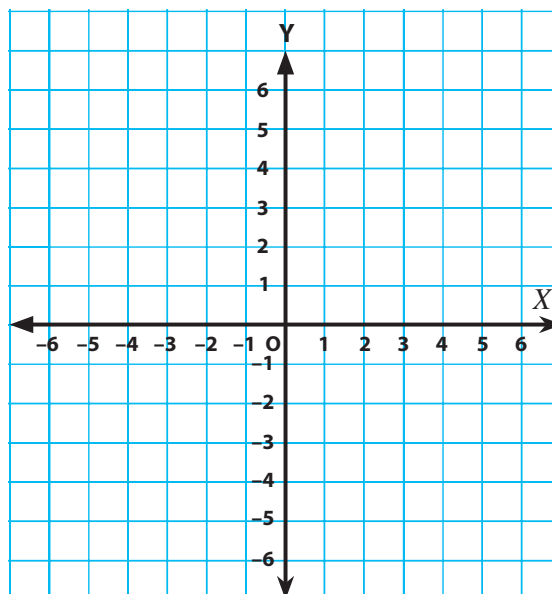
? : ? : 40

$$\text{The value of each part} = \frac{40}{5} = 8 \text{ cm}$$

$$\text{The length of first base} = 2 \times 8 = 16 \text{ cm}$$

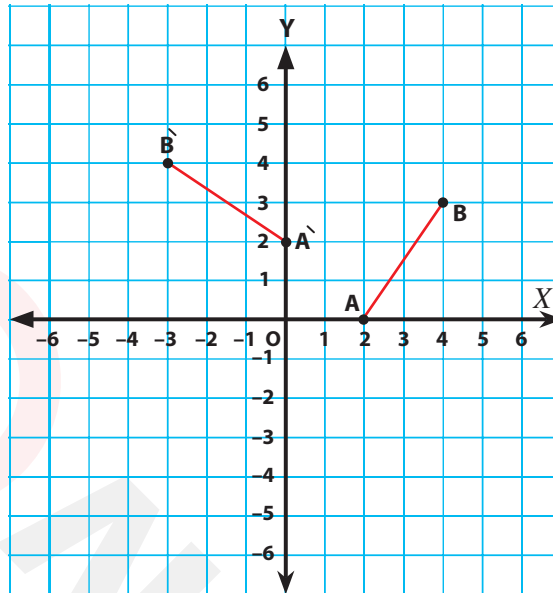
$$\text{The length of second base} = 3 \times 8 = 24 \text{ cm}$$

- b Draw  $\overline{AB}$  in the coordinate plane, where  $A(2, 0)$ ,  $B(4, 3)$ , then draw its image under rotation  $R(O, 90^\circ)$

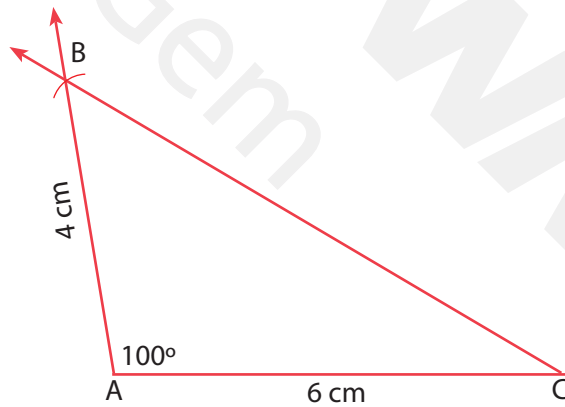


$$A(2, 0) \xrightarrow{R(O, 90^\circ)} A'(-2, 0)$$

$$B(4, 3) \xrightarrow{R(O, 90^\circ)} B'(-3, 4)$$

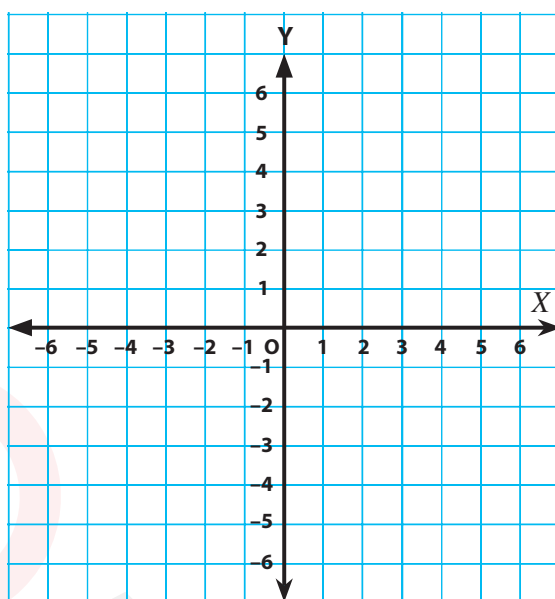


- c Draw the triangle ABC, where  $AB = 4$  cm,  $AC = 6$  cm and  $m(\angle BAC) = 100^\circ$





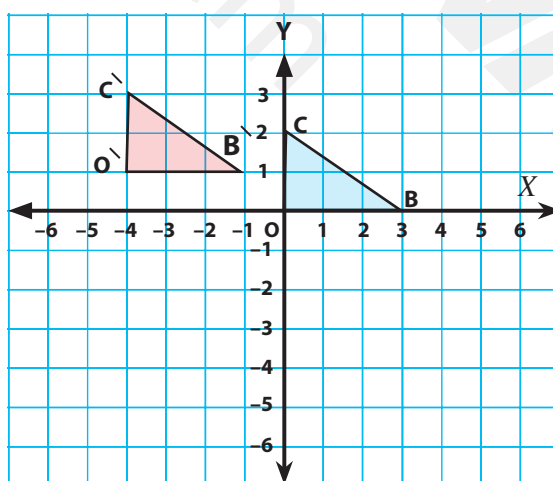
- d Draw  $\triangle OBC$  in the coordinate plane, where  $B(3, 0)$ ,  $C(0, 2)$ , then draw its image by translation  $(-4, 1)$



$$O(0, 0) \xrightarrow[(-4, 1)]{\text{by translation}} O'(-4, 1)$$

$$B(3, 0) \xrightarrow[(-4, 1)]{\text{by translation}} B'(-1, 1)$$

$$C(0, 2) \xrightarrow[(-4, 1)]{\text{by translation}} C'(-4, 3)$$

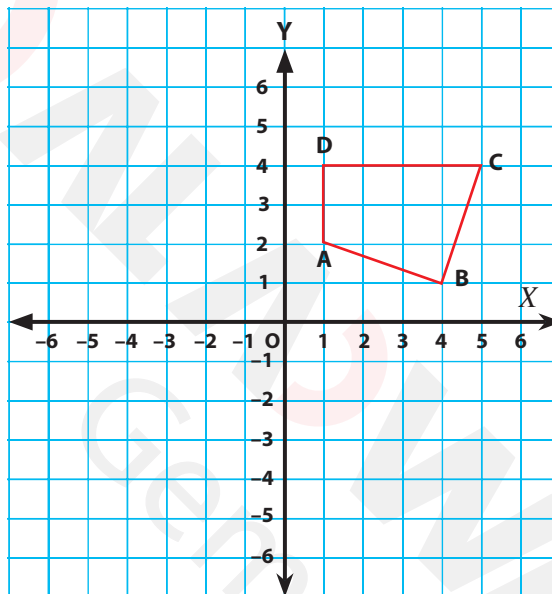


## 1- Choose the correct answer:

- a The image of the point  $(-7, 2)$  under rotation  $R(O, 180^\circ)$  is .....  
 $((-2, 7), (7, -2), (-7, -2), (-2, -7))$
- b The image of the point  $(5, 7)$  under rotation  $R(O, 90^\circ)$  followed by rotation  $(O, -90^\circ)$  is .....  
 $((-5, -7), (7, 5), (-5, 7), (5, 7))$

## 2- Answer each of the following:

- a Draw the image of the quadrilateral ABCD by the translation  $(1, -2)$  followed by the translation  $(-6, 4)$ .

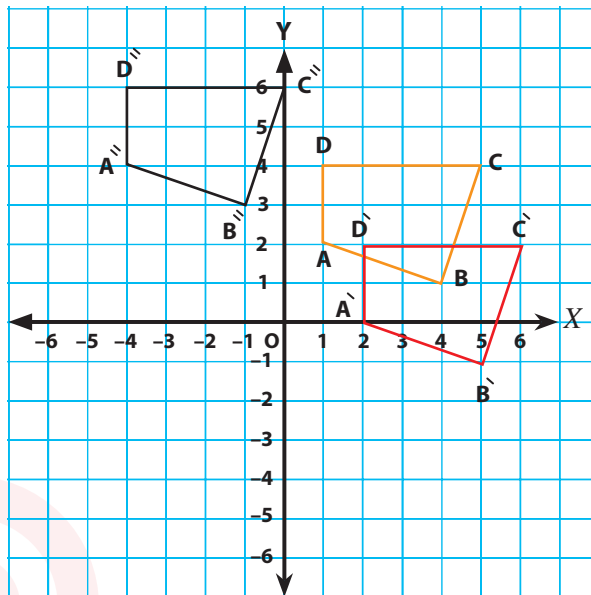


$$A(1, 2) \xrightarrow[(1, -2)]{\text{by translation}} A'(2, 0) \xrightarrow[(-6, 4)]{\text{by translation}} A''(-4, 4)$$

$$B(4, 1) \xrightarrow[(1, -2)]{\text{by translation}} B'(5, -1) \xrightarrow[(-6, 4)]{\text{by translation}} B''(-1, 3)$$

$$C(5, 4) \xrightarrow[(1, -2)]{\text{by translation}} C'(6, 2) \xrightarrow[(-6, 4)]{\text{by translation}} C''(0, 6)$$

$$D(1, 4) \xrightarrow[(1, -2)]{\text{by translation}} D'(2, 2) \xrightarrow[(-6, 4)]{\text{by translation}} D''(-4, 6)$$

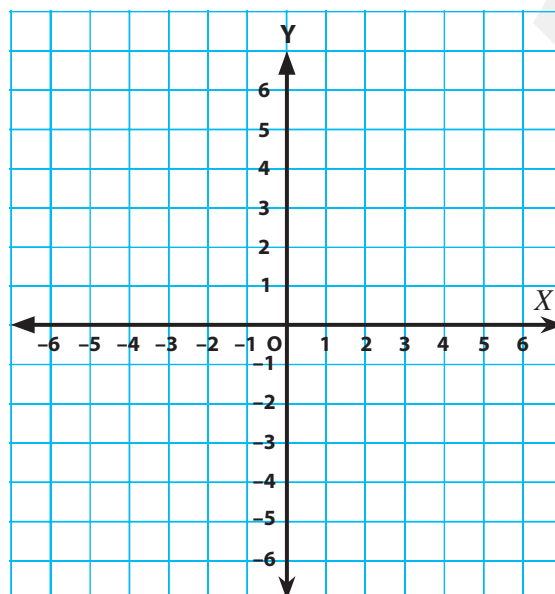


- b** A trapezium has an area of  $135 \text{ cm}^2$  and a height 9 cm, if the length of one of its bases is 10 cm. Find the length of its other base.

$$\text{The middle base} = \frac{\text{The area}}{\text{height}} = \frac{135}{9} = 15 \text{ cm}$$

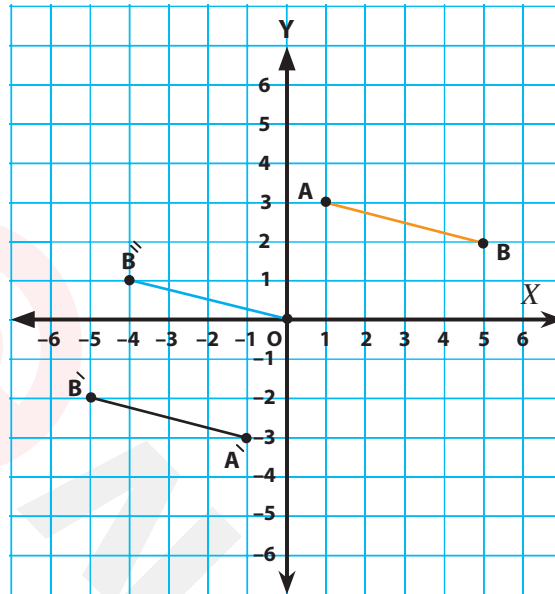
$$\begin{aligned} \text{The length of the other base} &= 2 \times \text{middle base} - \text{first base} \\ &= 2 \times 15 - 10 \\ &= 30 - 10 = 20 \text{ cm} \end{aligned}$$

- c** Draw  $\overline{AB}$  in the coordinate plane, where A (1, 3), B (5, 2), then draw its image under rotation  $R(O, 180^\circ)$  followed by translation (1, 3).

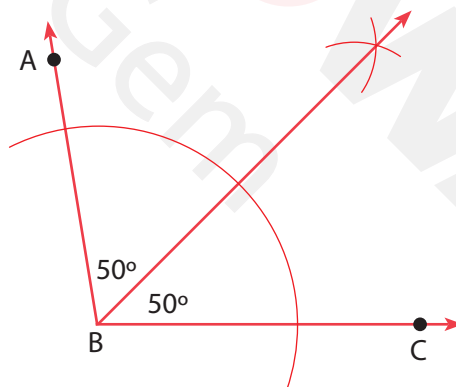


$$A(1, 3) \xrightarrow{R(O, 180^\circ)} A'(-1, -3) \xrightarrow[\text{by translation}]{(1, 3)} O(0, 0)$$

$$B(5, 2) \xrightarrow{R(O, 180^\circ)} B'(-5, -2) \xrightarrow[\text{by translation}]{(1, 3)} B''(-4, 1)$$



- d Draw  $\angle ABC$  of measure  $100^\circ$ , then bisect it using the ruler and compass.



حمل الآن

مجاناً وحصرياً

# المراجعة رقم (3)

## اختبار شهر ابريل



Unit (3)

Week (8)

Lesson (3)  
Geometrical  
Constructions

Date: / /

Classroom Performance:

## Activity (1): Geometrical Applications

Geometrical tools are used in many applications.

Who can name some of these applications?



## Activity (2): Home Garden Planning

Share your groupmates in:

- Plant a fruit tree in the middle of one side of the garden.
- Create a straight footpath perpendicular to the other side, passing through its middle to ensure symmetry and balance in the design.



(Hint: You must establish an axis of symmetry for a straight line)

## Homework:

Answer the following:

- 1) Using geometrical tools, draw an angle  $\angle BAC$  measuring  $100^\circ$ , bisect it by  $\overrightarrow{BD}$ , and then use a protractor to make sure that:  $m(\angle ABD) = m(\angle CBD)$ .
- 2) Draw a straight line  $\overline{AB}$  8 cm long, then bisect it using the geometrical tools at C. Then, use a ruler to make sure that C is at the midpoint of  $\overline{AB}$ .

- 3) Draw  $\triangle ABC$  where the length of  $\overline{AB}$  equals 6 cm,  $m(\angle A) = 60^\circ$  and  $m(\angle B) = 70^\circ$ , then use the protractor to find the measure of third angle of the triangle.
- 4) Draw  $\triangle ABC$  where  $AB = 3$  cm,  $CB = 4$  cm and  $AC = 5$  cm, then bisect  $\overline{AC}$  at D, and then join D by B, Using a ruler to find the length of  $\overline{BD}$ , What do you notice?
- 5) Draw  $\triangle ABC$  where  $AB = 5$  cm,  $AC = 7$  cm, and  $m(\angle B A C) = 75^\circ$ , Determine the type of triangle according to the measures of its angles.



Unit (3)

Week (9)

Lesson (3)  
Geometrical  
Transformations

Date: / /

Classroom Performance:

### Activity (1): Notice and Write

Look at the following picture:  
Write your notes in cooperation  
with your classmate, then the  
teacher will discuss these notes.



### Activity (2): Transformations journey

Determine the type of geometric transformation in each of:

Original

Image



Original

Image



Original

Image



Homework:

Answer the following:

Draw the triangle whose vertices are A(1, 2), B(4, 5), C(5, 1), then find:

- 1) Its image by reflection in the x-axis
- 2) Its image by reflection in the y-axis

Draw the triangle whose vertices are  $A(-1, 2)$ ,  $B(4, 2)$ ,  $C(4, 5)$ , then find:

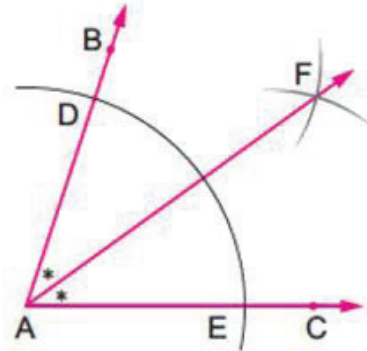
- 3) Its image by reflection in the  $x$ -axis
- 4) Its image by reflection in the  $y$ -axis
- 5) Draw the triangle whose vertices are  $A(-1, 2)$ ,  $B(3, 1)$ ,  $C(0, 4)$ , then find:  
Its image by reflection in the  $x$ -axis.

## Weekly Assessment - Week (9)

## Model (A)

**First: Choose the correct answer:**

- 1) In the opposite figure:

Bisected  $\angle BAC$  using compass and ruler,  
by .....a)  $\overrightarrow{AF}$ b)  $\overrightarrow{AE}$ c)  $\overrightarrow{AB}$ d)  $\overrightarrow{AD}$ 

- 2) The image of
- $(-1, 4)$
- by reflection in the x-axis
- 
- is .....

a)  $(4, 1)$ b)  $(4, -1)$ c)  $(1, 4)$ d)  $(-1, -4)$ **Second: Answer the following:**

- 3) Using geometrical tools, draw an angle  $\angle ABC$  measuring  $150^\circ$ , then bisect it by  $\overrightarrow{BD}$ , and then use a protractor to make sure that:  
 $m(\angle ABD) = m(\angle CBD)$ .
- 4) Draw the triangle ABC whose vertices are  $A(0, 3)$ ,  $B(4, 0)$ ,  $C(4, 5)$ , then find:  
Its image by reflection in the x-axis
- 5) Draw  $\triangle ABC$  where  $AB = 8$  cm,  $m(\angle A) = 60^\circ$ , and  $m(\angle B) = 30^\circ$ , then using a protractor, find the measure of the third angle of the triangle.

## Model (B)

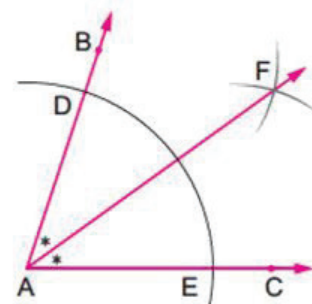
**First: Choose the correct answer:**

- 1) In the opposite figure:

When Bisecting  $\angle BAC$  using a compass and a ruler, we find that:  $m(\angle BAF) =$

.....

- a)  $m(\angle BAC)$       b)  $2 m(\angle BAC)$   
 c)  $m(\angle EAF)$       d)  $\frac{1}{2} m(\angle BAC)$



- 2) The image of
- $(4, 1)$
- by reflection in the x-axis is .....

- a)  $(4, 1)$       b)  $(4, -1)$       c)  $(-1, 4)$       d)  $(-1, -4)$

**Second: Answer the following:**

- 3) Using geometrical tools, draw an angle  $\angle ABC$  measuring  $110^\circ$ , then bisect it by  $\overrightarrow{BD}$ , and then use a protractor to make sure that:  $m(\angle ABD) = m(\angle CBD)$ .
- 4) Draw the triangle ABC whose vertices are  $A(0, 3)$ ,  $B(4, 0)$ ,  $C(4, 5)$ , then find:  
 Its image by reflection in the y-axis
- 5) Draw  $\triangle ABC$  where  $AB = 4$  cm,  $m(\angle A) = 30^\circ$ , and  $m(\angle B) = 60^\circ$ , then using a protractor, find the measure of the third angle of the triangle.

## Model (C)

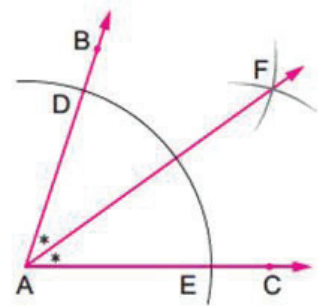
**First: Choose the correct answer:**

1) In the opposite figure:

When Bisecting  $\angle BAC$  using a compass and a ruler, we find that:  $m(\angle BAF) =$

.....

- a)  $m(\angle BAC)$       b)  $2m(\angle BAC)$   
 c)  $m(\angle EAF)$       d)  $\frac{1}{4}m(\angle BAC)$



2) The image of (1, 4) by reflection in the y-axis is .....

- a) (4, 1)      b) (4, -1)      c) (-1, 4)      d) (-1, -4)

**Second: Answer the following:**

- 3) Using geometrical tools, draw an angle  $\angle ABC$  measuring  $130^\circ$ , then bisect it by  $\overrightarrow{BD}$ , and then use a protractor to make sure that:  $m(\angle ABD) = m(\angle CBD)$ .
- 4) Draw the triangle ABC whose vertices are A(0, 4), B(3, 0), C(3, 5), then find:  
 Its image by reflection in the x-axis
- 5) Draw  $\triangle ABC$  where  $AB = 5$  cm,  $m(\angle A) = 50^\circ$ , and  $m(\angle B) = 40^\circ$ , then using a protractor, find the measure of the third angle of the triangle.

Unit (3)

Week (10)

Continue Lesson (3)  
Geometrical Transformations  
(Translation and Rotation)

Date: / /

Classroom Performance:

## Activity (1): Shapes in our lives

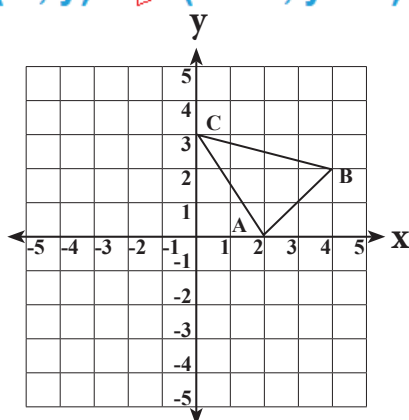
Look at the following picture and write your notes in cooperation with your classmate.



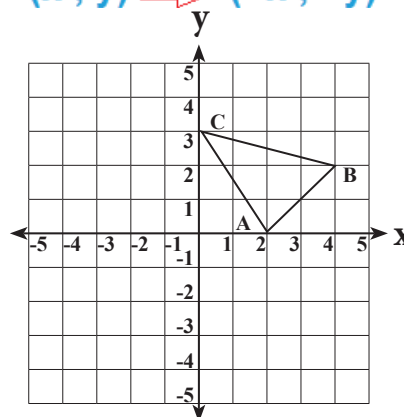
## Activity (1): draw an image

Draw an image of each of the following shapes according to the geometric transformation shown, then describe its type:

$$(x, y) \rightarrow (x - 4, y + 1)$$



$$(x, y) \rightarrow (-x, -y)$$



## Homework:

Answer the following:

Draw the triangle ABC whose vertices are A(1, 2), B(4, 5), C(5, 1), then find:

- 1) Its image by the translation (3, 2)
- 2) Its image by the rotation  $R(O, 180^\circ)$

Draw the triangle ABC whose vertices are A(-1, 2), B(4, 2), C(4, 5), then find:

- 3) Its image by the translation (3, 2)
- 4) Its image by the translation of 3 units to the right.
- 5) Draw the triangle ABC whose vertices are A(-1, 2), B(3, 1), C(0, 4), then find: Its image by rotation  $R(O, 90^\circ)$

## Weekly Assessment - Week (10)

## Model (A)

**First: Choose the correct answer:**1) The image of  $(4, 2)$  by the rotation  $R(O, 90^\circ)$  ?

- a)
- $(4, -2)$
- b)
- $(-2, 4)$
- c)
- $(-4, -2)$
- d)
- $(-4, 2)$

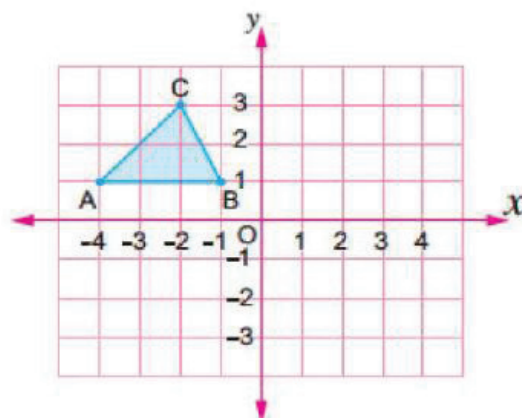
2) The point  $(2, 5)$  is an image of  $(3, 2)$  by the translation .....

- a)
- $(3, -1)$
- b)
- $(-3, 1)$
- c)
- $(1, 3)$
- d)
- $(1, -3)$

**Second: Answer the following:**

Draw the image of the following triangle by:

- 3) Rotation
- $R(O, 180^\circ)$
- 
- 4) Translation
- $(2, 0)$
- 
- 5) Rotation
- $R(O, 90^\circ)$



## Model (B)

**First: Choose the correct answer:**1) The image of  $(4, 5)$  by the rotation  $R(O, 90^\circ)$  ?

- a)
- $(4, -5)$
- b)
- $(-5, 4)$
- c)
- $(-4, -5)$
- d)
- $(-4, 5)$

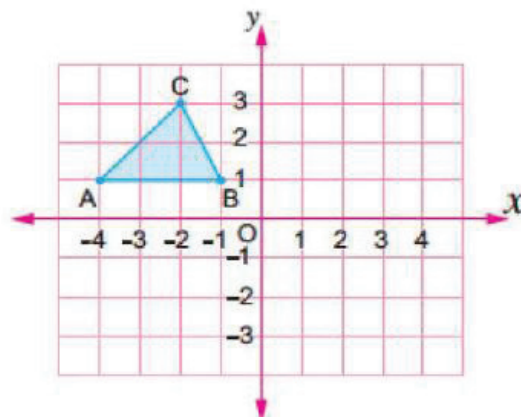
2) The point  $(2, 5)$  is an image of  $(-1, 6)$  by the translation .....

- a)
- $(3, -1)$
- b)
- $(-3, 1)$
- c)
- $(1, 3)$
- d)
- $(1, -3)$

**Second: Answer the following:**

Draw the image of the following triangle by:

- 3) Rotation
- $R(O, 90^\circ)$
- 
- 4) Translation
- $(0, 2)$
- 
- 5) Rotation
- $R(O, -180^\circ)$





## Model (C)

**First: Choose the correct answer:**1) The image of  $(4, 7)$  by the rotation  $R(O, 90^\circ)$  ?

- a)  $(4, -7)$       b)  $(-7, 4)$       c)  $(-4, -7)$       d)  $(-4, 7)$

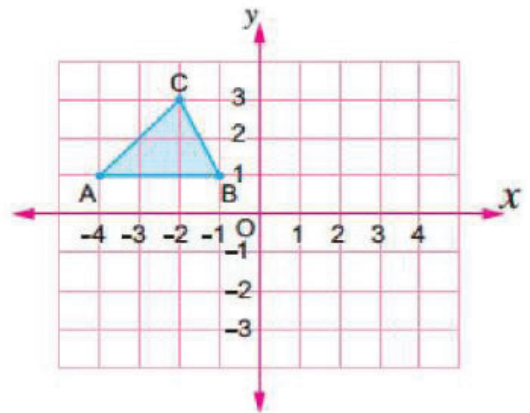
2) The point  $(2, 5)$  is an image of  $(5, 4)$  by the translation .....

- a)  $(3, -1)$       b)  $(-3, 1)$       c)  $(1, 3)$       d)  $(1, -3)$

**Second: Answer the following:**

Draw the image of the following triangle  
by:

- 3) Rotation  $R(O, 90^\circ)$   
 4) Translation  $(0, 3)$   
 5) Rotation  $R(O, 180^\circ)$



Unit (3)

Week (11)

Lesson (3-4)  
Composite of Geometrical  
Transformations

Date: / /

Classroom Performance:

## Activity (1): Note and complete

Notice the following picture and write your observations in cooperation with the classmate. The teacher will then discuss these observations and ask the following questions:

Triangle A is an image of triangle B by .....

Triangle C is an image of triangle ..... by reflection in the x-axis

Triangle A is an image of triangle C by reflection in the .....-axis

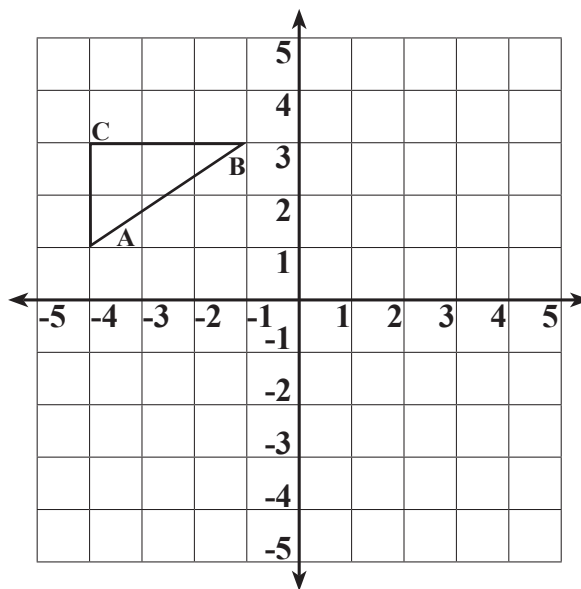
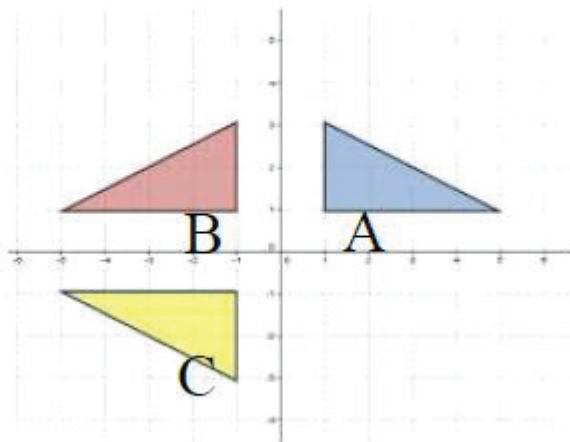
Followed by reflection in the .....-axis

## Activity (2): Moves Shapes

In your groupmates:

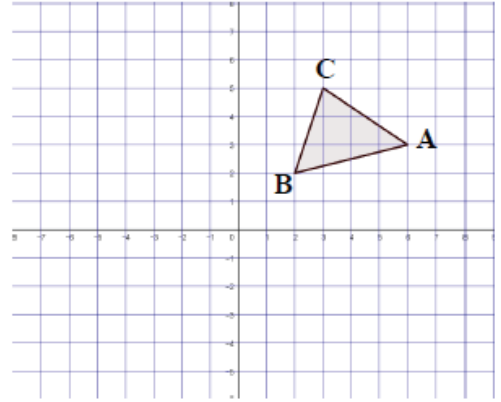
Move the shape to a new position on the square paper (e.g., 3 units to the right, 2 units down).

- Reflect the opposite shape about the x- or y-axis.
- Rotate the opposite shape by  $90^\circ$ ,  $180^\circ$ , or  $270^\circ$  about the original point.



**Homework:****Answer the following:**

- 1) Draw the image of triangle ABC by reflection in the x-axis followed by reflection in the y-axis.
- 2) Draw the image of triangle ABC by the translation (2, 1) followed by translation (-2, -1)
- 3) Draw the image of triangle ABC by the rotation  $R(0, 90^\circ)$  followed by rotation  $R(0, 180^\circ)$ .
- 4) Find the images of the point (1, -5) by the reflection in the y-axis followed by reflection in the x-axis.
- 5) Find the images of the point (1, -5) by:  
First: Translation (3, 0) followed by translation (4, -1)  
Second: Rotation  $R(0, -90^\circ)$  followed by Rotation  $R(0, 270^\circ)$

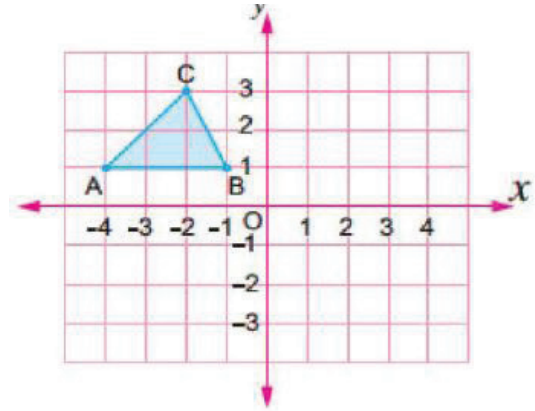
**Weekly Assessment - Week (11)****Model (A)****First: Choose the correct answer:**

- 1) The image of the point (2, 3) by the reflection in the x-axis followed by reflection in the y-axis is .....  
a) (-2, 3)      b) (-2, -3)      c) (2, -3)      d) (2, 3)
- 2) The image of the point (-1, 2) by the translation (1, -1) followed by the translation (2, 1) is .....  
a) (2, -2)      b) (2, 2)      c) (1, 2)      d) (2, -1)

**Second: Answer the following:**

Draw the image of the following triangle by:

- 3) Reflection in the y-axis followed by reflection in the x-axis
- 4) Reflection in the x-axis followed by reflection in the y-axis
- 5) Rotation  $R(O, -90^\circ)$  followed by rotation  $R(O, 180^\circ)$



(5) أوجد صور النقطة  $(-2, 0)$

أولاً : بالانتقال  $(-3, 1)$  متبوعاً بالانتقال  $(0, -2)$

ثانياً : بالانتقال  $R(O, 90^\circ)$  متبوعاً بالانتقال  $R(O, 270^\circ)$

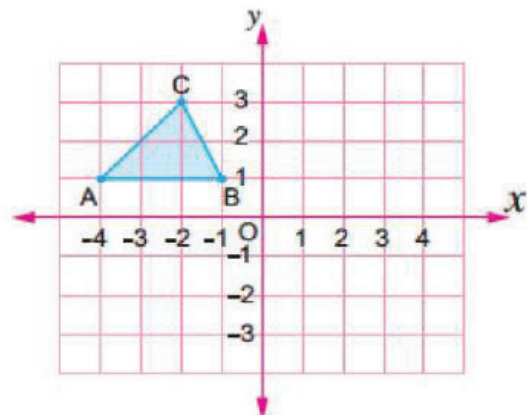
**Model (B)****First: Choose the correct answer:**

- 1) The image of the point  $(3, 2)$  by the reflection in the x-axis followed by reflection in the y-axis is .....  
 a)  $(-3, -2)$       b)  $(-3, 2)$       c)  $(3, -2)$       d)  $(3, 2)$
- 2) The image of the point  $(-1, 2)$  by the translation  $(2, -1)$  followed by the translation  $(1, 2)$  is .....  
 a)  $(3, -2)$       b)  $(3, 2)$       c)  $(2, 3)$       d)  $(2, -3)$

**Second: Answer the following:**

Draw the image of the following triangle by:

- 3) Reflection in the x-axis followed by reflection in the y-axis



- 4) Reflection in the y-axis followed by reflection in the x-axis
- 5) Rotation  $R(O, 90^\circ)$  followed by rotation  $R(O, 180^\circ)$

(5) أوجد صور النقطة  $(-2, 1)$

أولاً : بالانتقال  $(-4, 1)$  متبوعاً بالانتقال  $(0, -3)$

ثانياً : بالانتقال  $R(O, 270)$  متبوعاً بالانتقال  $R(O, 90)$

### Model (C)

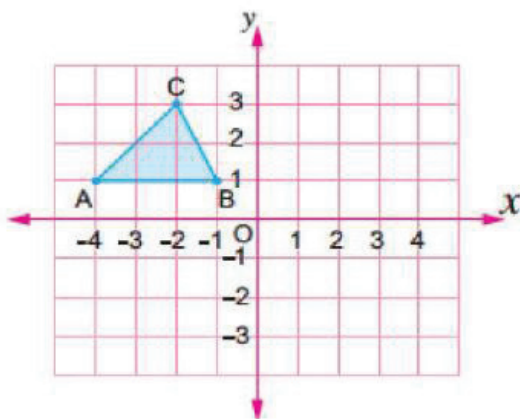
**First: Choose the correct answer:**

- 1) The image of the point  $(4, 1)$  by the reflection in the x-axis followed by reflection in the y-axis is .....
- a)  $(-4, -1)$       b)  $(-4, 1)$       c)  $(1, -4)$       d)  $(1, 4)$
- 2) The image of the point  $(-3, 1)$  by the translation  $(1, -1)$  followed by the translation  $(2, 1)$  is .....
- a)  $(-1, 0)$       b)  $(0, -1)$       c)  $(0, 1)$       d)  $(1, 0)$

**Second: Answer the following:**

Draw the image of the following triangle by:

- 3) Reflection in the y-axis followed by reflection in the x-axis
- 4) Reflection in the x-axis followed by reflection in the y-axis
- 5) Rotation  $R(O, 180^\circ)$  followed by rotation  $R(O, 90^\circ)$



(5) أوجد صور النقطة  $(-3, 1)$

أولاً : بالانتقال  $(-3, 1)$  متبوعاً بالانتقال  $(0, -2)$

ثانياً : بالانتقال  $R(O, 90)$  متبوعاً بالانتقال  $R(O, 270)$

Unit (4)

Week (12)

Lesson (1): Random  
Experiment – Sample  
Space – Events

Date: / /

Classroom Performance:

## Activity (1): Handball

The opposite figure shows two bags containing identical balls: one has balls of different colors (2 red, 2 blue and 2 green). The other has all balls of blue color.



In cooperation with your groupmates, write your notes on the following:

If a ball is drawn at random from the first bag:

- (1) Do you know its color before and after the draw?
- (2) What are all the possible color choices for the drawn ball?
- (3) Can a white ball be drawn ?
- (4) Can a red, blue, or green ball be drawn ?

If you draw a ball at random from the second bag, do you know its color before and after drawing?

## Activity (2): Cards

Collaborate with your groupmates to prepare cards numbered 1 to 10, then answer the following questions:

- Use these cards to conduct a random experiment and describe it.
- Write the sample space for this random experiment.
- Identify one certain event and one impossible event for this random experiment.

**Homework:****Answer the following:**

- 1) Determine which of the following experiments are random and which are not, then write the sample space for each of the random experiments, indicating the number of its elements:
  - (1) In the experiment of tossing a fair coin 3 times in successively and observing the sequence of appearances of heads and tails.
  - (2) Choose a digit of the number 3253 randomly.
  - (3) Drew one of 10 identical cards and observe the number written on them. All of them have the number 9 written on them.
  
- 2) In the experiment of tossing a fair die is rolled once and the number appearing on the upper, write the sample space (S). Find each of the following events, indicating the type of it (simple, certain, impossible):
  - (1) A is the event of obtaining an odd number.
  - (2) B is the event of obtaining a number greater than 4
  - (3) C is the event of obtaining the number 3
  - (4) D is the event of obtaining a number less than 7
  - (5) E is the event of obtaining the number 6
  - (6) F is the event of getting a number that satisfies:  $x \geq 2$
  
- 3) If has an identical cards is drawn at random from 20 to 29 and the number on the drawn card is recorded, find each of the following events:
  - (1) A is the event of obtaining a number greater than 25
  - (2) B is the event of obtaining a number less than 20
  - (3) C is the event of obtaining a prime number.
  - (4) D is the event of obtaining an even number.
  
- 4) In the experiment of tossing a fair coin twice in successively and observing the sequence of appearances of heads and tails, write the sample space (S) and then express each of the following events:
  - (1) A is the event of "appearance of a head on the first toss"
  - (2) B is the event of "appearance of a tail on the first toss"
  - (3) C is the event of "no heads appear"
  - (4) D is the event of "appearance of the same outcome on both tosses"



5) In the experiment of rolling a fair die twice successively, and observing the number that appears on the upper face, write the following events:

- (1) A is the event of "appearance of the number 3 on the first roll"
- (2) B is the event of "appearance of two numbers whose sum is 9"
- (3) C is the event of "appearance of the same outcome on the second roll"
- (4) D is the event of "appearance of the same number on both tosses"

### End of the second month exercises

**First: Choose the correct answer:**

- 1) The image of point  $(3, 2)$  by the Rotation  $R(O, 90^\circ)$  ?  
a)  $(3, -2)$       b)  $(-2, 3)$       c)  $(-3, -2)$       d)  $(-3, 2)$
- 2) The image of the point  $(1, -3)$  by the translation of 3 units down is .....  
a)  $(4, -3)$       b)  $(1, -6)$       c)  $(-2, 3)$       d)  $(-2, -3)$
- 3) The image of the point  $(-1, 5)$  by the translation  $(3, -1)$  is .....  
a)  $(-2, 4)$       b)  $(2, -4)$       c)  $(2, 4)$       d)  $(-1, -6)$
- 4) Which of the following points has its own image reflected in the x-axis?  
a)  $(4, 0)$       b)  $(0, -6)$       c)  $(-2, 2)$       d)  $(-3, -3)$
- 5) The image of the point  $(3, 4)$  by the reflection in the x-axis followed by reflection in the y-axis is .....  
a)  $(4, -3)$       b)  $(-3, -4)$       c)  $(4, 3)$       d)  $(3, 4)$
- 6) The image of the point  $(-2, 5)$  by the rotation around the origin by an angle of measure  $90^\circ$  degrees followed by the rotation  $R(O, 180^\circ)$  is .....  
a)  $(2, 5)$       b)  $(-5, -2)$       c)  $(-2, -5)$       d)  $(-2, 5)$
- 7) The image of the point  $(3, 4)$  by the reflection in the x-axis is .....  
a)  $(4, -3)$       b)  $(-3, -4)$       c)  $(4, 3)$       d)  $(3, -4)$

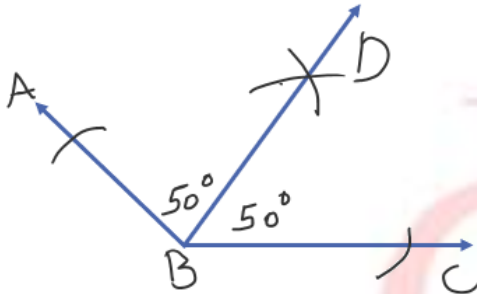
- 8) The sample space for the experiment of randomly choosing one of the numbers in the number 3344 is: .....
- a) { 4 , 5 }                      b) { 4 , 3 }                      c) { 3 }                      d) { 4 }
- 9) The point (3, 5) is an image of the point (-1 , 6) by the translation .....
- a) ( 4 , - 1 )                      b) ( - 4 , 1 )                      c) ( 1 , 4 )                      d) ( 1 , - 4 )

### Second: Answer the following:

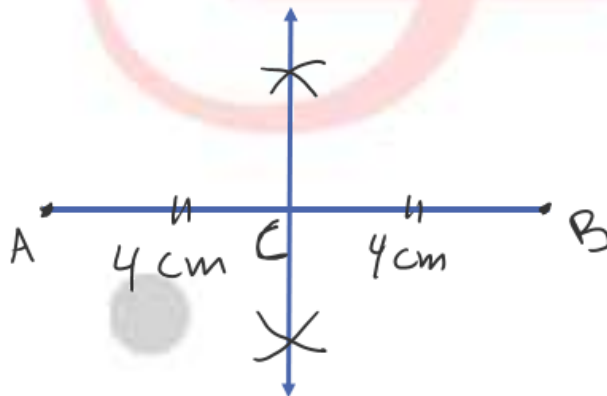
- 1) Draw the equilateral triangle ABC whose side length is 5 cm.
- 2) Draw  $\triangle ABC$  where  $BC = 5$  cm,  $m(\angle C) = 38^\circ$ , and  $m(\angle B) = 42^\circ$
- 3) Draw  $\triangle ABC$  where  $AB = AC = 4$  cm,  $m(\angle BAC) = 60^\circ$
- 4) Find the image of the point (0 , 3) by the reflection in the x-axis.
- 5) If (- 5, 0) is the image of (-5, 0), determine whether the reflection is in X-axis or Y-axis.
- 6) Find the image of point (5 , 3) by the rotation  $R(0 , 90^\circ)$
- 7) Find the image of point (- 2 , 1) by the rotation  $R(0 , - 90^\circ)$
- 8) Draw triangle ABC where A(-1 , 2) , B(3 , 1) and C(3 , 4). Then, draw its image by the rotation  $R(0 , - 270^\circ)$
- 9) Draw triangle ABC where A(-1 , 2) , B(3 , 1) and C(3 , 4). Then, draw its image by the translation (1 , - 2)
- 10) Draw triangle ABC where A(-1 , 1) , B(3 , 1) and C(3 , 4). Then, draw its image by the translation  $(x + 4 , y - 1)$
- 11) Draw an angle measuring  $80^\circ$ , then bisect it using a ruler and compass.
- 12) Draw  $\overline{AB}$  its length is 6 cm and bisect it using a ruler and compass, and make sure of it by measuring.

**Home Performance Week 8****Answer the following :-**

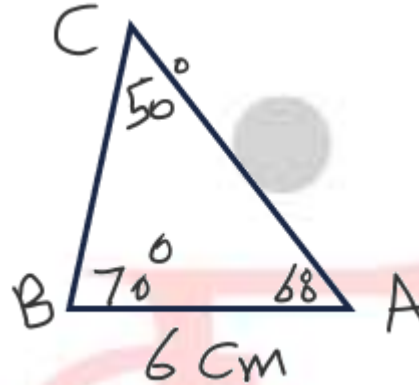
1) Using geometrical tools, draw an angle  $\angle BAC$  measuring  $100^\circ$ , bisect it by  $\overrightarrow{BD}$ , and then use a protractor to make sure that:  $m(\angle ABD) = m(\angle CBD)$ .



2) Draw a straight line  $\overline{AB} = 8$  cm long, then bisect it using the geometrical tools at  $C$ . Then, use a ruler to make sure that  $C$  is at the midpoint of  $\overline{AB}$  8 cm long, then bisect it using the geometrical tools at  $C$ . Then, use a ruler to make sure that  $C$  is at the midpoint of  $\overline{AB}$ .



3) Draw  $\triangle ABC$  where the length of AB equals 6 cm,  $m(\angle A) = 60^\circ$  and  $m(\angle B) = 70^\circ$ , then use the protractor to find the measure of third angle of the triangle.



4) Draw  $\triangle ABC$  where  $AB = 3$  cm,  $CB = 4$  cm and  $AC = 5$  cm, then bisect AC at D and then join D by B, Using a ruler to find the length, What do you notice?



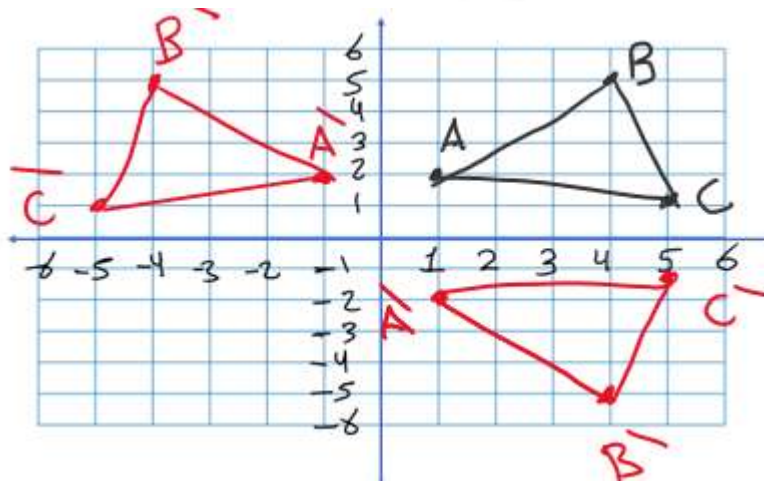
5) Draw  $\triangle ABC$  where  $AB = 5$  cm,  $AC = 7$  cm, and  $m(\angle B A C) = 75^\circ$ , Determine the type of triangle according to the measures of its angles.

**Acute angled-triangle**

**Home Performance Week 9****Answer the following :-**

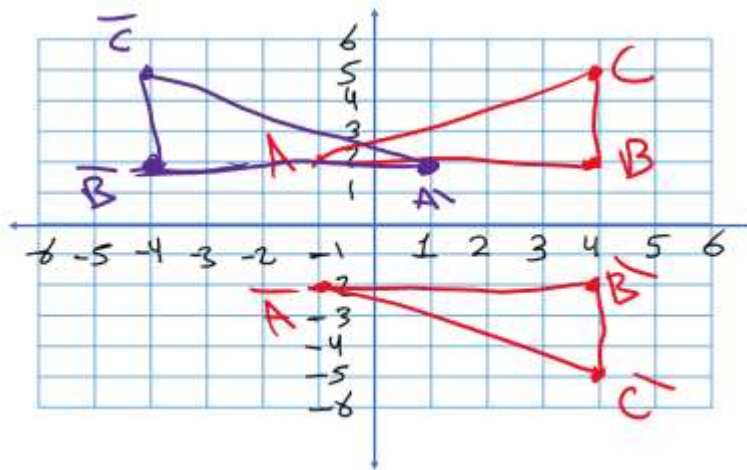
Draw the triangle whose vertices are  $A(1, 2)$ ,  $B(4, 5)$ ,  $C(5, 1)$ , then find:

- 1) Its image by reflection in the x-axis
- 2) Its image by reflection in the y-axis

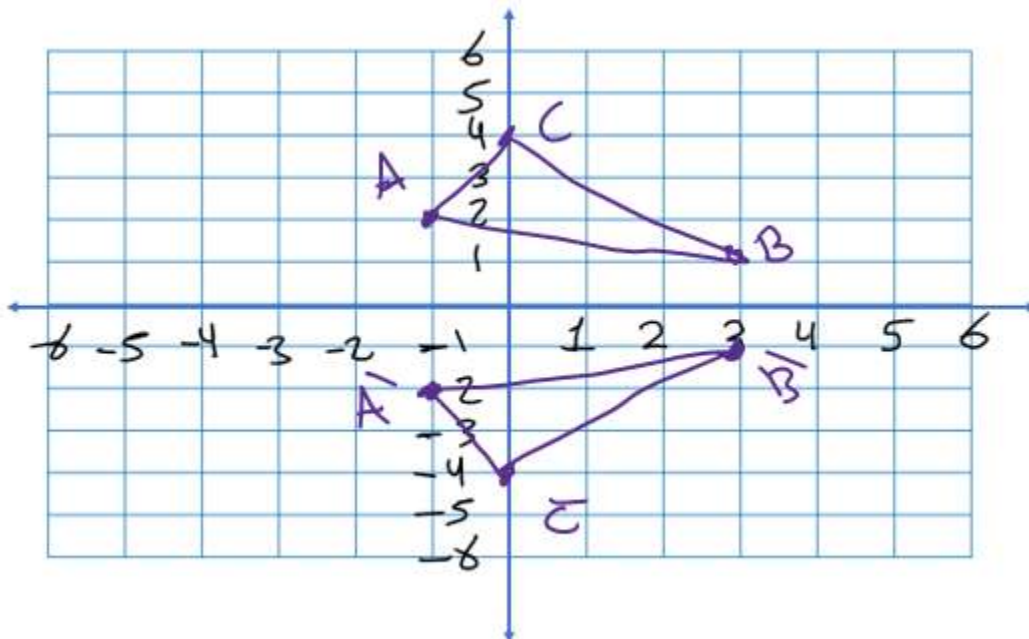


Draw the triangle whose vertices are  $A(-1, 2)$ ,  $B(4, 2)$ ,  $C(4, 5)$ , then find:

- 3) Its image by reflection in the x-axis
- 4) Its image by reflection in the y-axis



5) Draw the triangle whose vertices are  $A(-1, 2)$ ,  $B(3, 1)$ ,  $C(0, 4)$ , then find:  
Its image by reflection in the x-axis.



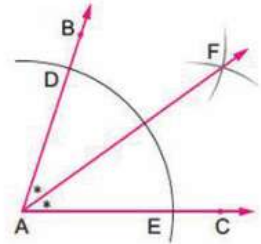
## Assessment Week 9

Model A

**First – choose the correct answer :-**

1) In the opposite figure: Bisected  $\angle BAC$  using compass and ruler, by .....

- a)  $\overrightarrow{AF}$       b)  $\overrightarrow{AE}$       c)  $\overrightarrow{AB}$       d)  $\overrightarrow{AD}$

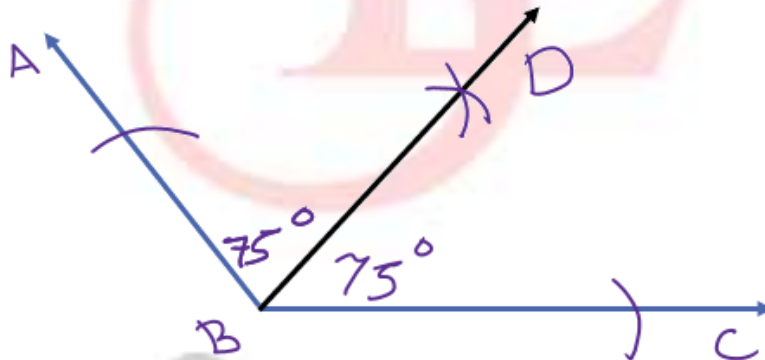


2) The image of  $(-1, 4)$  by reflection in the x-axis is .....

- a)  $(4,1)$       b)  $(4,-1)$       c)  $(1,4)$       d)  $(-1,-4)$

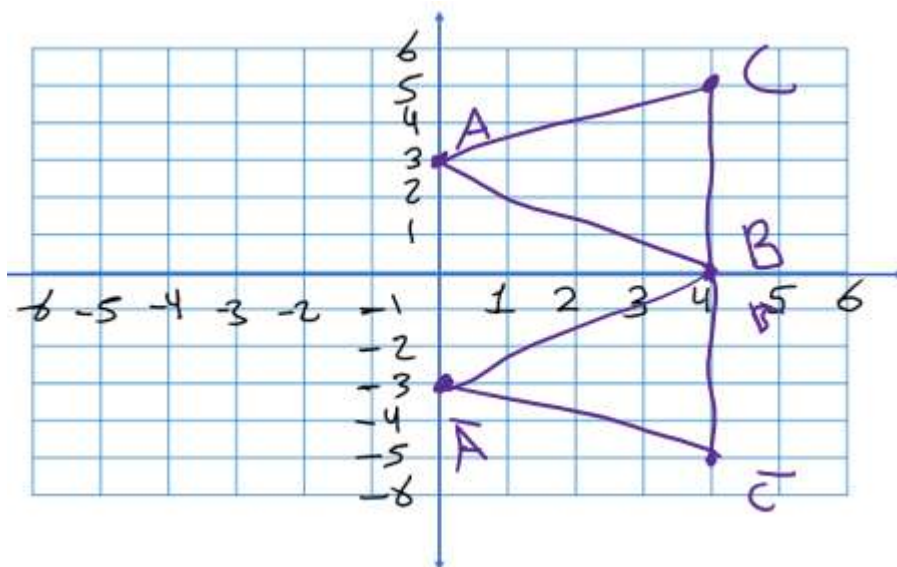
**Second – Answer the following :-**

3) Using geometrical tools, draw an angle  $\angle ABC$  measuring  $150^\circ$ , then bisect it by BD, and then use a protractor to make sure that:  $m(\angle ABD) = m(\angle CBD)$ .

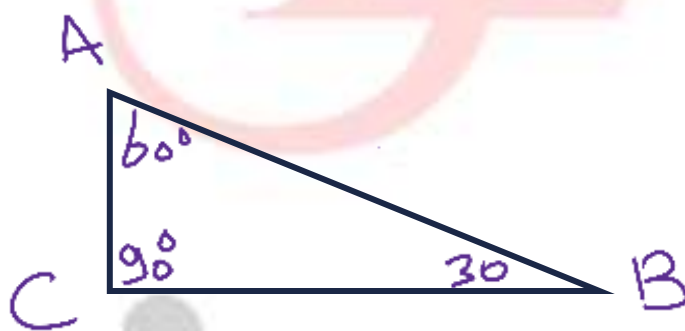




4) Draw the triangle ABC whose vertices are A(0, 3), B(4, 0), C(4, 5), then find: Its image by reflection in the x-axis



5) Draw  $\triangle ABC$  where  $AB = 8$  cm,  $m(\angle A) = 60^\circ$ , and  $m(\angle B) = 30^\circ$ , then using a protractor, find the measure of the third angle of the triangle.

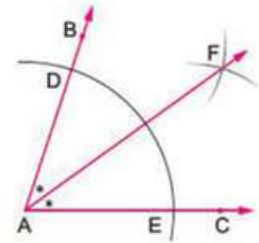


## Model B

First – choose the correct answer :-

1) In the opposite figure: When Bisecting  $\angle BAC$  using a compass and a ruler, we find that:  $m(\angle BAF) =$

- a)  $m(\angle BAC)$     b)  $2m(\angle BAC)$     c)  $m(\angle EAF)$     d)  $\frac{1}{2}m(\angle BAC)$

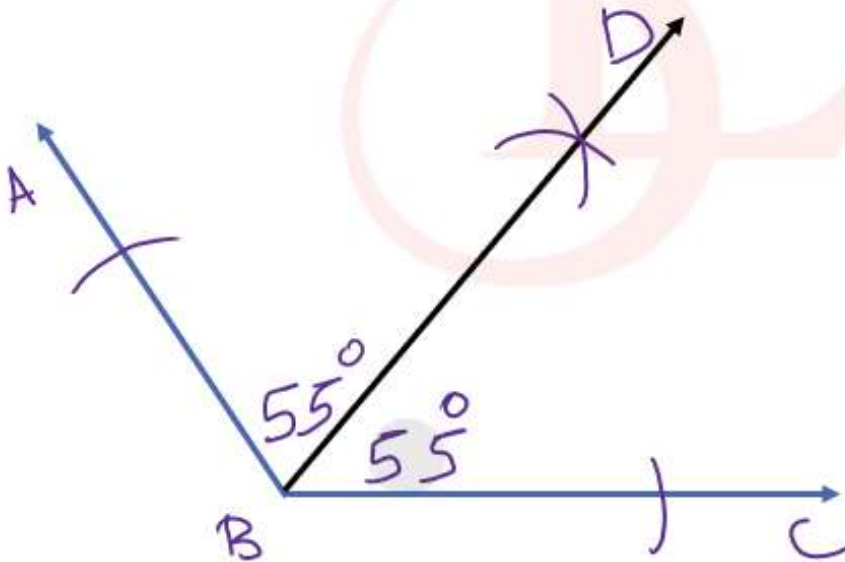


2) The image of  $(4, 1)$  by reflection in the x-axis is .....

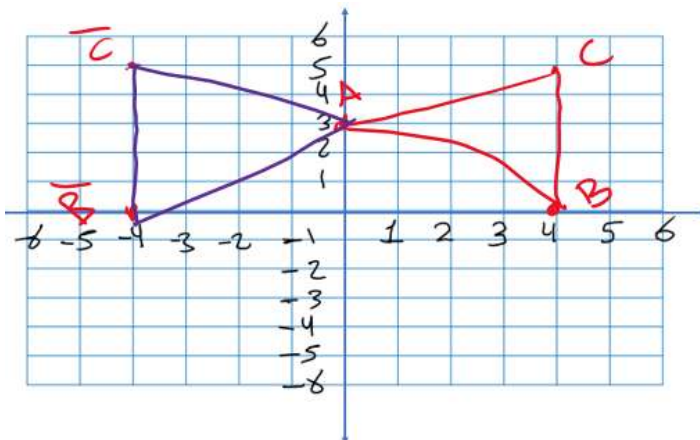
- a)  $(4,1)$     b)  $(4,-1)$     c)  $(-1,4)$     d)  $(-1,-4)$

Second – Answer the following :-

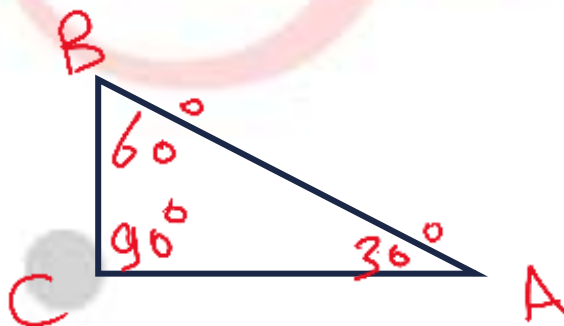
3) Using geometrical tools, draw an angle  $\angle ABC$  measuring  $110^\circ$ , then bisect it by BD and then use a protractor to make sure that:  $m(\angle ABD) = m(\angle CBD)$ .



4) Draw the triangle ABC whose vertices are A(0, 3), B(4, 0), C(4, 5), then find: Its image by reflection in the y-axis



5) Draw  $\triangle ABC$  where  $AB = 4$  cm,  $m(\angle A) = 30^\circ$ , and  $m(\angle B) = 60^\circ$ , then using a protractor, find the measure of the third angle of the triangle.

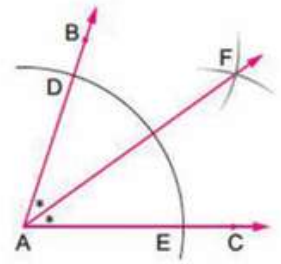


## Model C

First – choose the correct answer :-

1) In the opposite figure: When Bisecting  $\angle BAC$  using a compass and a ruler, we find that:  $m(\angle BAC) =$

- a)  $m(\angle BAC)$     b)  $2m(\angle BAF)$     c)  $m(\angle EAF)$     d)  $\frac{1}{4}m(\angle BAC)$

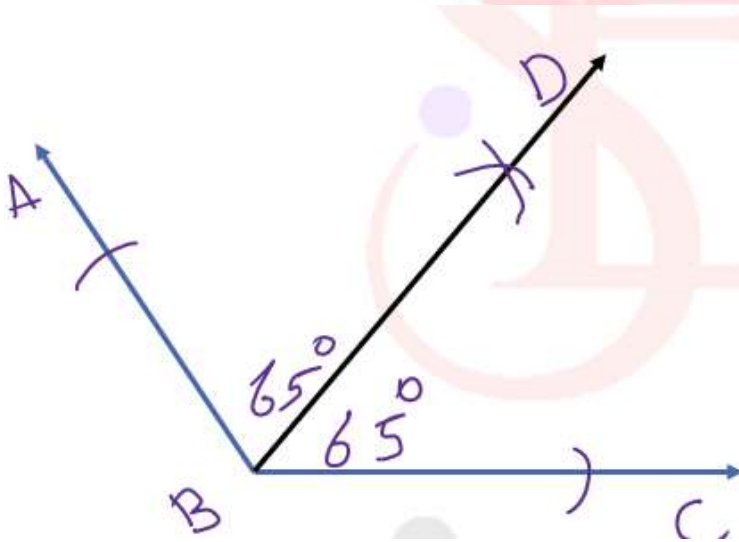


2) The image of (1, 4) by reflection in the y-axis is .....

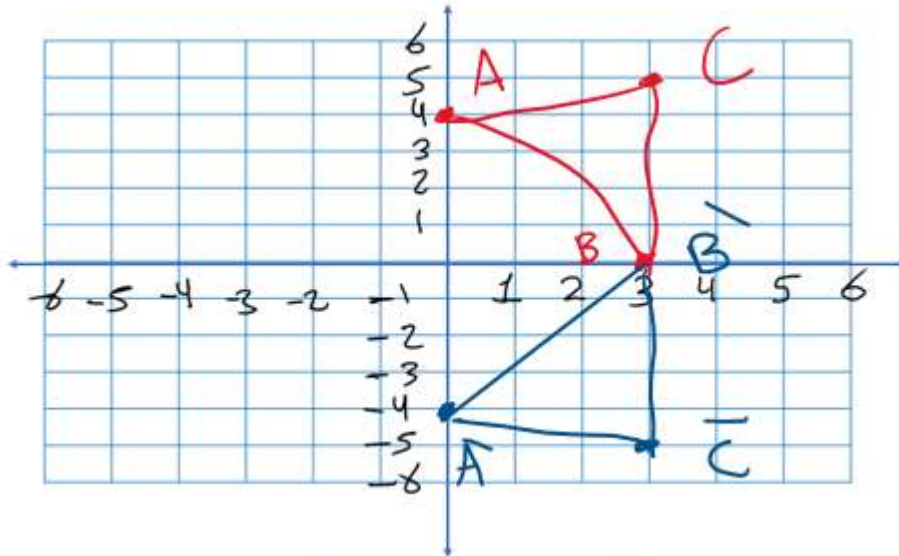
- a) (4,1)    b) (4,-1)    c) (-1,4)    d) (-1,-4)

Second – Answer the following :-

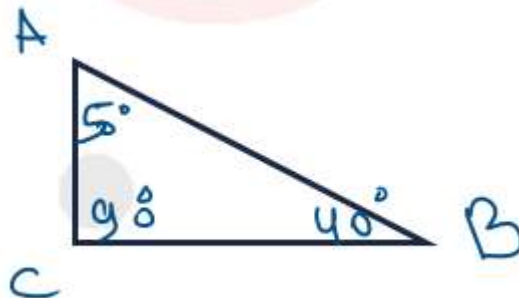
3) Using geometrical tools, draw an angle  $\angle ABC$  measuring  $130^\circ$ , then bisect it by BD and then use a protractor to make sure that:  $m(\angle ABD) = m(\angle CBD)$ .



4) Draw the triangle ABC whose vertices are A(0, 4), B(3, 0), C(3, 5), then find: Its image by reflection in the x-axis



5) Draw  $\triangle ABC$  where  $AB = 5$  cm,  $m(\angle A) = 50^\circ$ , and  $m(\angle B) = 40^\circ$ , then using a protractor, find the measure of the third angle of the triangle.

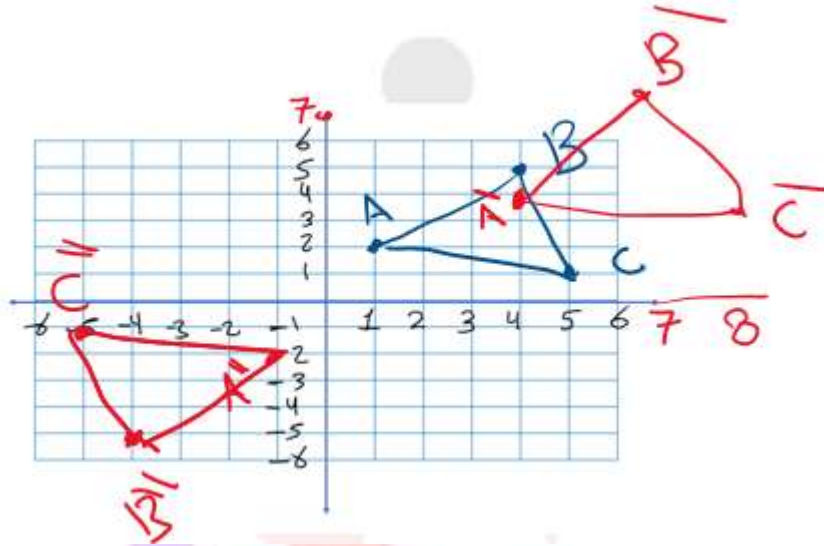


## Home Performance Week 10

Answer the following :-

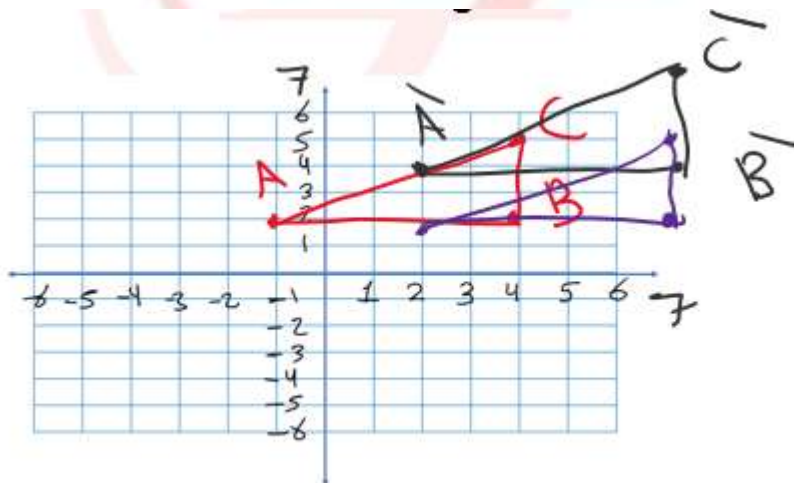
Draw the triangle ABC whose vertices are A(1, 2), B(4, 5), C(5, 1), then find:

- 1) Its image by the translation (3, 2)
- 2) Its image by the rotation  $R(O, 180^\circ)$

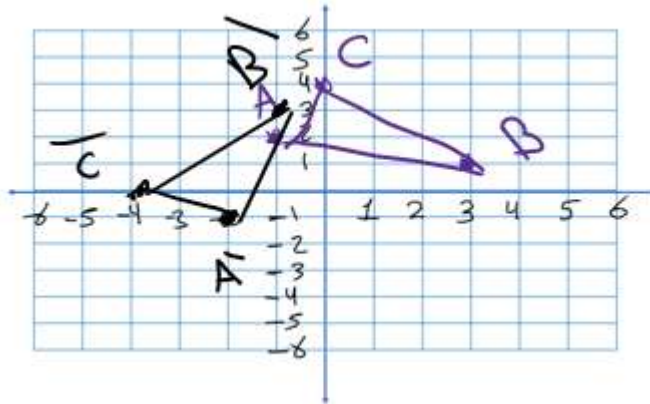


Draw the triangle ABC whose vertices are A(-1, 2), B(4, 2), C(4, 5), then find:

- 3) Its image by the translation (3, 2)
- 4) Its image by the translation of 3 units to the right.



5) Draw the triangle ABC whose vertices are  $A(-1, 2)$ ,  $B(3, 1)$ ,  $C(0, 4)$ , then find:  
Its image by rotation  $R(O, 90^\circ)$





## Assessment Week 10

Model A

First – choose the correct answer :-1) The image of  $(4, 2)$  by the rotation  $R(O, 90^\circ)$  ?

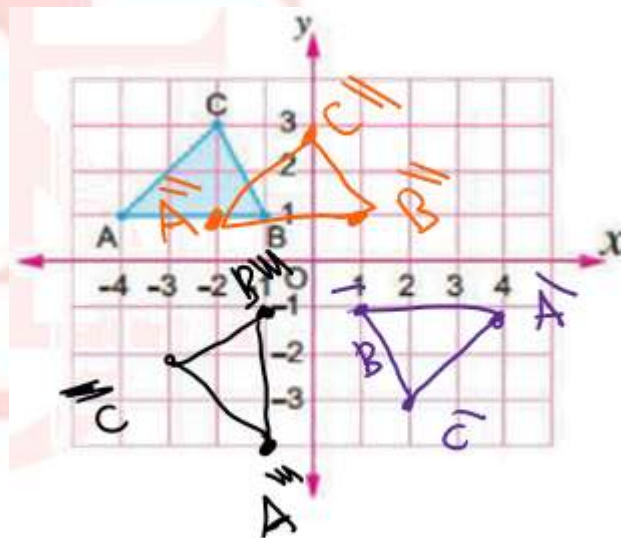
- a)  $(4, -2)$       b)  $(-2, 4)$       c)  $(-4, -2)$       d)  $(-4, 2)$

2) The point  $(2, 5)$  is an image of  $(3, 2)$  by the translation .....

- a)  $(3, -1)$       b)  $(-3, 1)$       c)  $(-1, 3)$       d)  $(1, -3)$

Second – Answer the following :-

draw the image of the following triangle by

3) Rotation  $R(O, 180^\circ)$ 3) Translation  $(2, 0)$ 5) Rotation  $R(O, 90^\circ)$ 

## Model B

First – choose the correct answer :-

1) The image of (4 , 5 ) by the rotation  $R(O , 90^\circ)$  ?

- a) (4,-5)      b) (-5,4)      c) (-4,-5)      d) (-4,5)

2) The point (2 , 5 ) is an image of (-1 , 6 ) by the translation .....

- a) (3,-1)      b) (-3,1)      c) (1,3)      d) (1,-3)

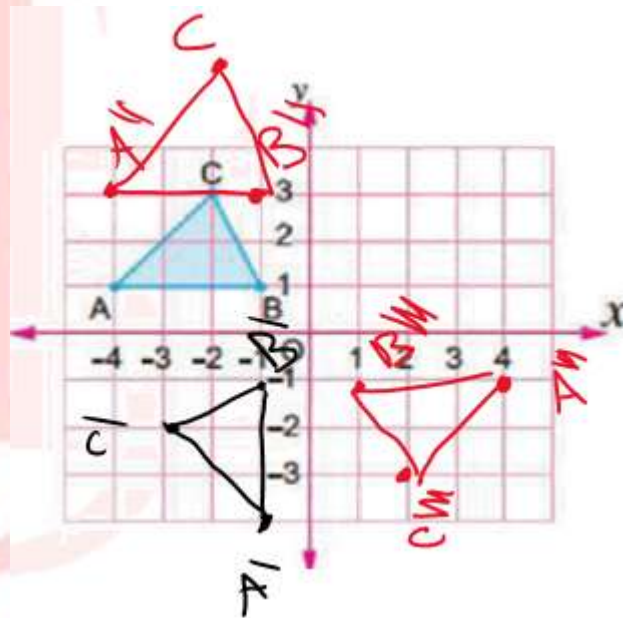
Second – Answer the following :-

draw the image of the following triangle by

3) Rotation  $R(O , 90^\circ)$

4) Translation (0 , 2 )

5) Rotation  $R(O , -180^\circ)$



## Model C

First – choose the correct answer :-1) The image of (4 , 7 ) by the rotation  $R(O , 90^\circ)$  ?

- a) (4,-7)                      b) **(-7,4)**                      c) (-4,-7)                      d) (-4,7)

2) The point (2 , 5 ) is an image of (5 , 4 ) by the translation .....

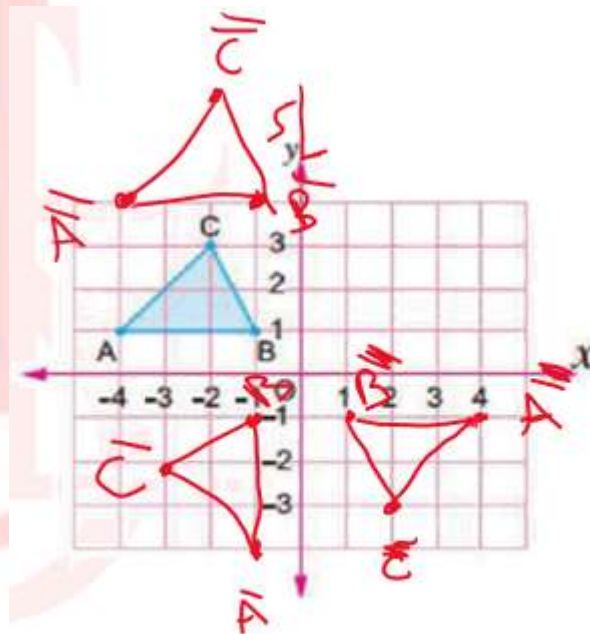
- a) (3,-1)                      b) **(-3,1)**                      c) (1,3)                      d) (1,-3)

Second – Answer the following :-

draw the image of the following triangle by

3) Rotation  $R(O , 90^\circ)$ 

4) Translation (0 , 3 )

5) Rotation  $R(O , 180^\circ)$ 

## Home Performance Week 11

Answer the following :-

1) Draw the image of triangle ABC by reflection in the x-axis followed by reflection in the y-axis.

2) Draw the image of triangle ABC by the translation (2, 1) followed by translation (-2, -1)

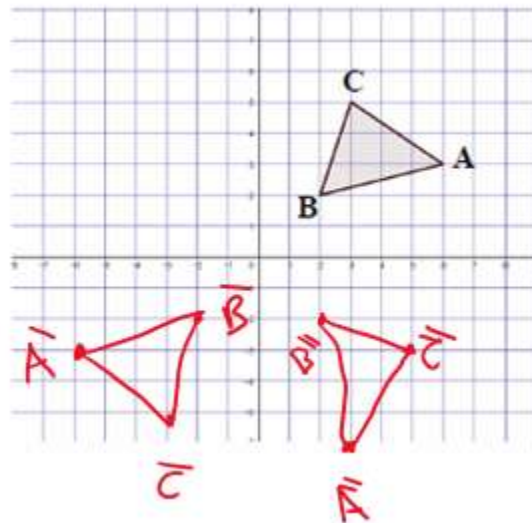
3) Draw the image of triangle ABC by the rotation  $R(0, 90^\circ)$  followed by rotation  $R(0, 180^\circ)$ .

4) Find the images of the point (1, -5) by the reflection in the y-axis followed by reflection in the x-axis. **(-1,5)**

5) Find the images of the point (1, -5) by:

First: Translation (3, 0) followed by translation (4, -1) **(8,-6)**

Second: Rotation  $R(0, -90^\circ)$  followed by Rotation  $R(0, 270^\circ)$  **(-1,5)**



**Assessment Week 11**

Model A

**First – choose the correct answer :-**

1) The image of the point (2, 3) by the reflection in the x-axis followed by reflection in the y-axis is .....

- a) (-2 , 3)      b) **(-2 , -3)**      c) (2 , -3)      d) (2 , 3)

2) The image of the point (- 1, 2) by the translation (1 , - 1) followed by the translation (2 , 1) is .....

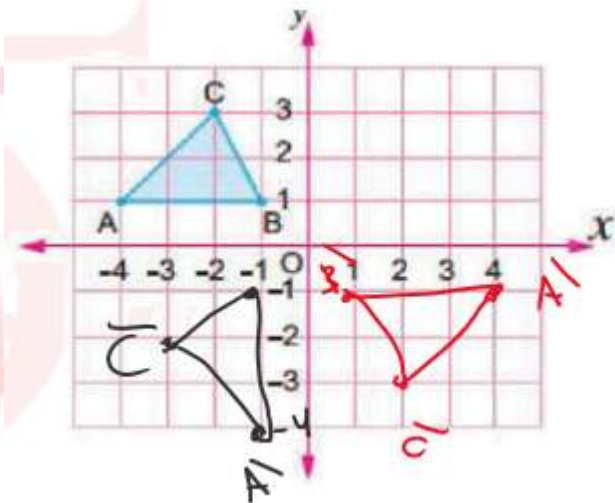
- a) (2 , -2)      b) **(2 , 2)**      c) (1 , 2)      d) (2 , -1)

**Second – Answer the following :-**

3) ) Reflection in the y-axis followed by reflection in the x-axis

4) ) Reflection in the x-axis followed by reflection in the y-axis

5) Rotation  $R(O, -90^\circ)$  followed by rotation  $R(O, 180^\circ)$



## Model B

**First – choose the correct answer :-**

1) The image of the point (3, 2) by the reflection in the x-axis followed by reflection in the y-axis is .....

- a) **(-3, -2)**                      b) (-2, -3)                      c) (3, -2)                      d) (3, 2)

2) The image of the point (-1, 2) by the translation (2, -1) followed by the translation (1, 2) is .....

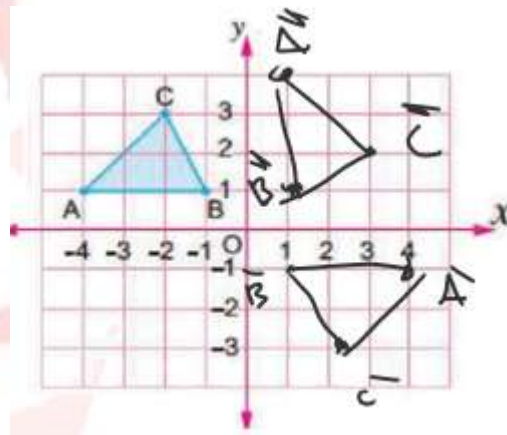
- a) (3, -2)                      b) (3, 2)                      c) **(2, 3)**                      d) (2, -3)

**Second – Answer the following :-**

3) Reflection in the x-axis followed by reflection in the y-axis

4) Reflection in the y-axis followed by reflection in the x-axis

5) Rotation  $R(O, 90^\circ)$  followed by rotation  $R(O, 180^\circ)$



## Model C

**First – choose the correct answer :-**

1) The image of the point (4, 1) by the reflection in the x-axis followed by reflection in the y-axis is .....

- a) **(-4 , -1)**      b) (-4 , 1)      c) (1 , -4)      d) (1 , 4)

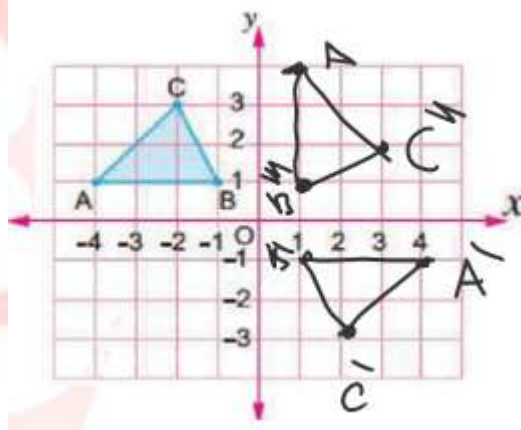
2) The image of the point (-3 , 1) by the translation (1 , - 1) followed by the translation (2 , 1) is .....

- a) (-1 , 0)      b) (0 , -1)      c) **(0 , 1)**      d) (1 , 0)

**Second – Answer the following :-**

3) ) Reflection in the y-axis followed by reflection in the x-axis

4) ) Reflection in the x-axis followed by reflection in the y-axis



5) Rotation  $R(O, 180^\circ)$  followed by rotation  $R(O, 90^\circ)$



**Home Performance Week 12****Answer the following :-**

1) Determine which of the following experiments are random and which are not, then write the sample space for each of the random experiments, indicating the number of its elements:

(1) In the experiment of tossing a fair coin 3 times in successively and observing the sequence of appearances of heads and tails.

**Random experiment**

$$S = \{HHH, HHT, HTT, HTH, TTT, TTH, THH, THT\} \quad n(S) = 8$$

(2) Choose a digit of the number 3253 randomly.

**Random experiment**

$$S = \{3, 2, 5, 3\} \quad n(S) = 4$$

(3) Drew one of 10 identical cards and observe the number written on them. All of them have the number 9 written on them.

**Not a random experiment**

2) In the experiment of tossing a fair die is rolled once and the number appearing on the upper, write the sample space (S). Find each of the following events, indicating the type of it (simple, certain, impossible):

$$S = \{1, 2, 3, 4, 5, 6\}$$

(1) A is the event of obtaining an odd number.  $\{1, 3, 5\}$

(2) B is the event of obtaining a number greater than 4  $\{5, 6\}$

(3) C is the event of obtaining the number 3  $\{3\}$  **simple**

(4) D is the event of obtaining a number less than 7  $\{1, 2, 3, 4, 5, 6\}$  **certain**

(5) E is the event of obtaining the number 6  $\{6\}$  **simple**

(6) F is the event of getting a number that satisfies:  $x \geq 2$   $\{2, 3, 4, 5, 6\}$



3) If has an identical cards is drawn at random from 20 to 29 and the number on the drawn card is recorded, find each of the following events:

(1) A is the event of obtaining a number greater than 25  $= \{26, 27, 28, 29\}$

(2) B is the event of obtaining a number less than 20  $= \emptyset$

(3) C is the event of obtaining a prime number.  $= \{23, 29\}$

(4) D is the event of obtaining an even number.  $= \{22, 24, 26, 28\}$

4) In the experiment of tossing a fair coin twice in successively and observing the sequence of appearances of heads and tails, write the sample space (S) and then express each of the following events:

$S = \{(H, H), (H, T), (T, T), (T, H)\}$

(1) A is the event of "appearance of a head on the first toss"  $= \{(H, H), (H, T)\}$

(2) B is the event of "appearance of a tail on the first toss"  $= \{(T, T), (T, H)\}$

(3) C is the event of "no heads appear"  $= \{(T, T)\}$

(4) D is the event of "appearance of the same outcome on both tosses"  $= \{(H, H), (T, T)\}$

5) In the experiment of rolling a fair die twice successively, and observing the number that appears on the upper face, write the following events:

(1) A is the event of "appearance of the number 3 on the first roll"  $=$

$\{(3, 1), (3, 2), (3, 4), (3, 4), (3, 5), (3, 6)\}$

(2) B is the event of "appearance of two numbers whose sum is 9"  $=$

$\{(3, 6), (4, 5), (6, 3), (5, 4)\}$

(3) C is the event of "appearance of the same outcome on the second roll"  $=$

$\{(1, 1), (2, 2), (3, 3), (4, 4), (5, 5), (6, 6)\}$

(4) D is the event of "appearance of the same number on both tosses"  $=$

$\{(1, 1), (2, 2), (3, 3), (4, 4), (5, 5), (6, 6)\}$

**End of 2<sup>nd</sup> Month****Q1 Choose the correct answer :-**

1. The image of point (3 , 2) by the Rotation  $R(O, 90^\circ)$  ?

- a) (3 , -2)      b) (-2 , 3)      c) (-3 , -2)      d) (-3 , 2)

2. The image of the point (1 , -3) by the translation of 3 units down is .....

- a) (4 , -3)      b) (1 , -6)      c) (-2 , 3)      d) (-2 , -3)

3. The image of the point (-1 , 5) by the translation (3 , -1) is .....

- a) (-2 , 4)      b) (2 , -4)      c) (2 , 4)      d) (-1 , -6)

4. Which of the following points has its own image reflected in the x-axis?

- a) (4 , 0)      b) (0 , -6)      c) (-2 , 2)      d) (-3 , -3)

5. The image of the point (3 , 4) by the reflection in the x-axis followed by reflection in the y-axis is .....

- a) (4 , -3)      b) (-3 , -4)      c) (4 , 3)      d) (3 , 4)

6. The image of the point (-2 , 5) by the rotation around the origin by an angle of measure 90 degrees followed by the rotation  $R(O, 180^\circ)$  is .....

- a) (2 , 5)      b) (-5 , -2)      c) (-2 , -5)      d) (-2 , 5)

7. The image of the point (3 , 4) by the reflection in the x-axis is .....

- a) (4 , -3)      b) (-3 , -4)      c) (4 , 3)      d) (3 , -4)

8) The sample space for the experiment of randomly choosing one of the numbers in the number 3344 is: .....

- a) {4,5}      b) {4,3}      c) {3}      d) {4}

9) The point (3, 5) is an image of the point (-1 , 6) by the translation ..

- a) (4 , -1)      b) (-4 , 1)      c) (1 , 4)      d) (1 , -4)



**Q2 Answer the following :-**

1) Draw the equilateral triangle ABC whose side length is 5 cm.

2) Draw  $\Delta ABC$  where  $BC = 5$  cm,  $m(\angle C) = 38^\circ$ , and  $m(\angle B) = 42^\circ$

3) Draw  $\Delta ABC$  where  $AB = AC = 4$  cm,  $m(\angle BAC) = 60^\circ$

4) Find the image of the point  $(0, 3)$  by the reflection in the x-axis.

5) If  $(-5, 0)$  is the image of  $(-5, 0)$ , determine whether the reflection is in X-axis or Y-axis.

6) Find the image of point  $(5, 3)$  by the rotation  $R(0, 90^\circ)$

7) Find the image of point  $(-2, 1)$  by the rotation  $R(0, -90^\circ)$

8) Draw triangle ABC where  $A(-1, 2)$ ,  $B(3, 1)$  and  $C(3, 4)$ . Then, draw its image by the rotation  $R(0, -270^\circ)$

9) Draw triangle ABC where  $A(-1, 2)$ ,  $B(3, 1)$  and  $C(3, 4)$ . Then, draw its image by the translation  $(1, -2)$

10) Draw triangle ABC where  $A(-1, 1)$ ,  $B(3, 1)$  and  $C(3, 4)$ . Then, draw its image by the translation  $(x + 4, y - 1)$

11) Draw an angle measuring  $80^\circ$ , then bisect it using a ruler and compass.

12) Draw  $\overline{AB}$  its length is 6 cm and bisect it using a ruler and compass, and make sure of it by measuring.

Answers

End of 2<sup>nd</sup> Month**Q1 Choose the correct answer :-**1. The image of point (3 , 2) by the Rotation  $R(O, 90^\circ)$  ?

- a) (3 , -2)      b) (-2 , 3)      c) (-3 , -2)      d) (-3 , 2)

2. The image of the point (1 , -3) by the translation of 3 units down is .....

- a) (4 , -3)      b) (1 , -6)      c) (-2 , 3)      d) (-2 , -3)

3. The image of the point (-1 , 5) by the translation (3 , -1) is .....

- a) (-2 , 4)      b) (2 , -4)      c) (2 , 4)      d) (-1 , -6)

4. Which of the following points has its own image reflected in the x-axis?

- a) (4 , 0)      b) (0 , -6)      c) (-2 , 2)      d) (-3 , -3)

5. The image of the point (3 , 4) by the reflection in the x-axis followed by reflection in the y-axis is .....

- a) (4 , -3)      b) (-3 , -4)      c) (4 , 3)      d) (3 , 4)

6. The image of the point (-2 , 5) by the rotation around the origin by an angle of measure 90 degrees followed by the rotation  $R(O, 180^\circ)$  is .....

- a) (2 , 5)      b) (-5 , -2)      c) (-2 , -5)      d) (-2 , 5)

7. The image of the point (3 , 4) by the reflection in the x-axis is .....

- a) (4 , -3)      b) (-3 , -4)      c) (4 , 3)      d) (3 , -4)

8) The sample space for the experiment of randomly choosing one of the numbers in the number 3344 is: .....

- a) {4,5}      b) {4,3}      c) {3}      d) {4}

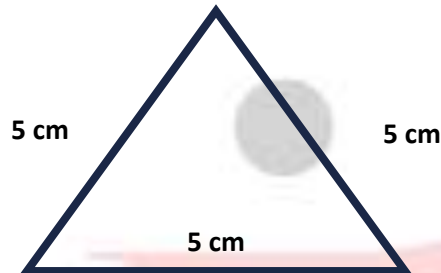
9) The point (3, 5) is an image of the point (-1 , 6) by the translation ..

- a) (4 , -1)      b) (-4 , 1)      c) (1 , 4)      d) (1 , -4)

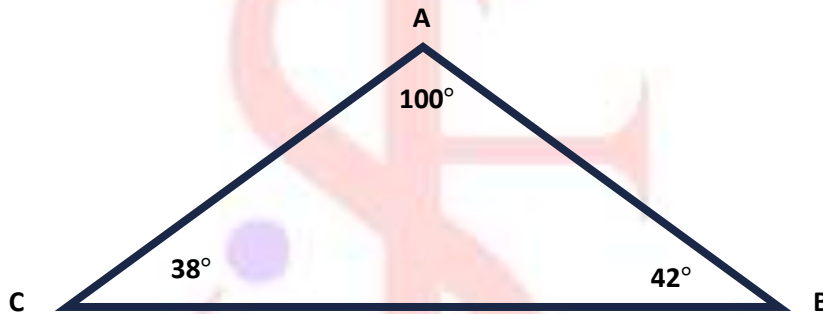


Q2 Answer the following :-

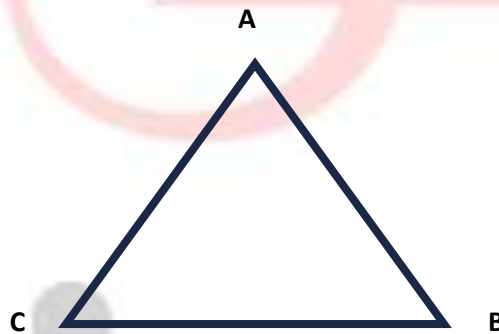
1) Draw the equilateral triangle ABC whose side length is 5 cm.



2) Draw  $\triangle ABC$  where  $BC = 5$  cm,  $m(\angle C) = 38^\circ$ , and  $m(\angle B) = 42^\circ$



3) Draw  $\triangle ABC$  where  $AB = AC = 4$  cm,  $m(\angle BAC) = 60^\circ$



4) Find the image of the point  $(0, 3)$  by the reflection in the x-axis.  $(0, -3)$

5) If  $(-5, 0)$  is the image of  $(-5, 0)$ , determine whether the reflection is in X-axis or Y-axis.  $Y\text{-axis}$



6) Find the image of point  $(5, 3)$  by the rotation  $R(0, 90^\circ)$   $(-3, 5)$

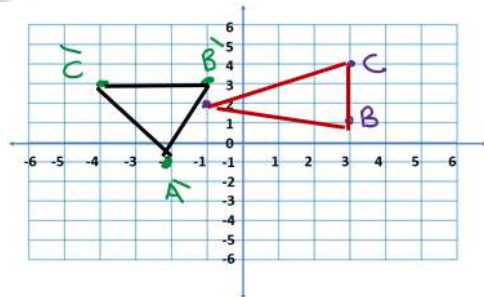
7) Find the image of point  $(-2, 1)$  by the rotation  $R(0, -90^\circ)$   $(1, 2)$

8) Draw triangle  $ABC$  where  $A(-1, 2)$ ,  $B(3, 1)$  and  $C(3, 4)$ . Then, draw its image by the rotation  $R(0, -270^\circ)$

$A'(-2, -1)$

$B'(-1, 3)$

$C'(-4, 3)$

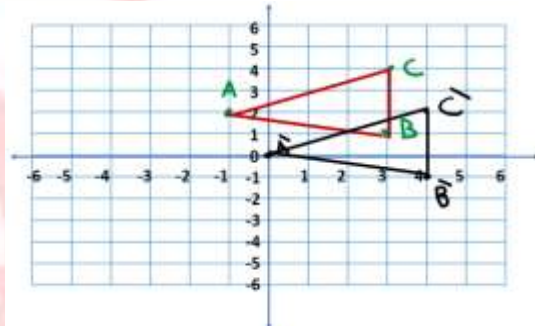


9) Draw triangle  $ABC$  where  $A(-1, 2)$ ,  $B(3, 1)$  and  $C(3, 4)$ . Then, draw its image by the translation  $(1, -2)$

$A'(0, 0)$

$B'(4, -1)$

$C'(4, 2)$

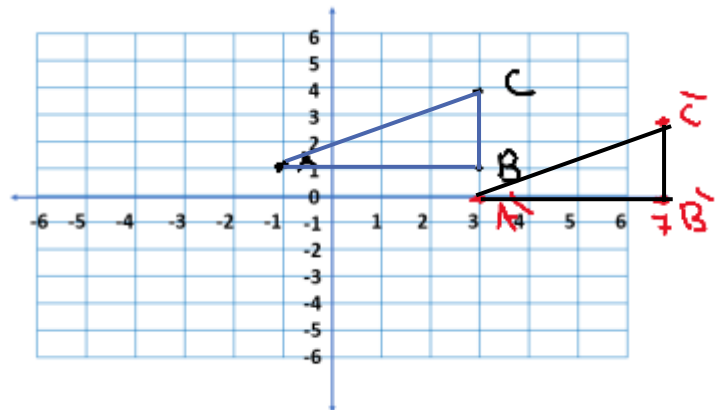


10) Draw triangle  $ABC$  where  $A(-1, 1)$ ,  $B(3, 1)$  and  $C(3, 4)$ . Then, draw its image by the translation  $(x + 4, y - 1)$

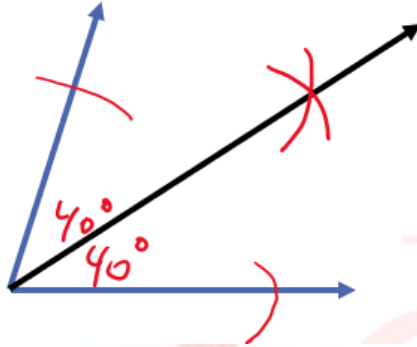
$A'(3, 0)$

$B'(7, 0)$

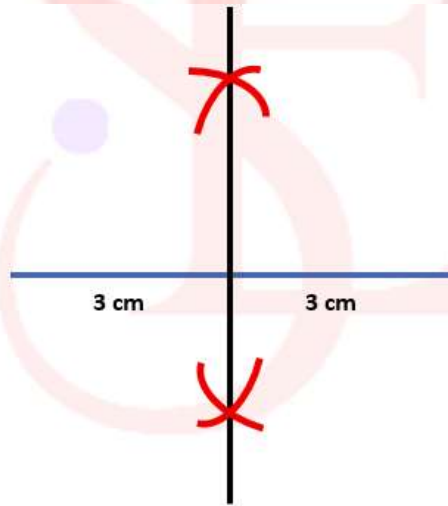
$C'(7, 3)$



11) Draw an angle measuring  $80^\circ$ , then bisect it using a ruler and compass.



12) Draw  $\overline{AB}$  its length is 6 cm and bisect it using a ruler and compass, and make sure of it by measuring.



حمل الآن

مجاناً وحصرياً

# المراجعة رقم (4)

## اختبار شهر ابريل



## Let's Remember

## 1 Areas :

- Area of **rectangle**  = Length x width
- Area of **parallelogram**  = base x height
- Area of **triangle**  =  $\frac{1}{2}$  x base x height
- Area of **square**  = Side x Side  
=  $\frac{1}{2}$  x diagonal x diagonal
- Area of **Rhombus**  = Side x height  
=  $\frac{1}{2}$  x diagonal 1 x diagonal 2
- Area of **trapezium**  = middle base x height  
=  $\frac{1}{2}$  x ( sum of two parallel bases ) x height

$$A = L \times w$$

$$A = B \times h$$

$$A = \frac{1}{2} \times b \times h$$

$$A = S^2$$

$$A = \frac{1}{2} \times d^2$$

$$A = S \times h$$

$$A = \frac{1}{2} \times d_1 \times d_2$$

$$A = b \times h$$

$$A = \frac{1}{2} \times (b_1 + b_2) \times h$$

## 2 Perimeter:

- Perimeter of square = side x 4  $S = P \div 4$
- Perimeter of Rhombus = side x 4  $S = P \div 4$
- Perimeter of equilateral triangle = side x 3  $S = P \div 3$

## 3 The type of triangle :

(( According to its sides ))

- all sides different ( **scalene** )
- two sides equal ( **isosceles** )
- all sides equal ( **equilateral** )

(( According to its angles ))

- all angles acute ( **acute** angled )
- one angle right ( **right** angled )
- one angle obtuse ( **obtuse** angled )

## Let's Remember

## 4 Geometric Transformation

The quadrant:

- ➡ the first : X coordinate positive and Y coordinate positive ex: ( 2 , 5)
- ➡ the second : X coordinate negative and Y coordinate positive ex: ( -1 , 3)
- ➡ the third : X coordinate negative and Y coordinate negative ex: ( -2 , -1)
- ➡ the forth : X coordinate positive and Y coordinate negative ex: ( 2 , -5)
- ➡ on X-axis : Y coordinate is zero ex: ( -3 , 0 ) or ( 2 , 0)
- ➡ on Y-axis : X coordinate is zero ex: ( 0 , 4 ) or ( 0 , -1)
- ➡ the origin : X coordinate and Y coordinate are zeros ( 0,0)

Reflection:

- ➡ on X- axis → changes sign of Y coordinate  
Example: the image of point A ( -3 , 4 ) on X-axis is ( -3, -4)
- ➡ on Y- axis → changes sign of X coordinate  
Example: the image of point A ( -1 , 2 ) on X-axis is ( 1 , 2)
- ➡ on X- axis followed by Y-axis → changes sign of X and Y coordinates  
Example: the image of point A ( 5 , -4 ) on X-axis followed by Y -axis is ( -5, 4)
- ➡ on X- axis followed by X-axis → the point **itself**  
on Y- axis followed by Y-axis → the point **itself**  
Example: the image of point A ( 3 , 0 ) on X-axis followed by X -axis again is ( 3, 0)
- ➡ if the point lies on X-axis , its reflection on X-axis is **itself**
- ➡ if the point lies on Y-axis , its reflection on Y-axis is **itself**

**Let's Remember**Translation:

- ➔ move point **right** ( +X ) , **left** ( -X ) , **up** ( +Y ) , **down** ( -Y )
- ➔ The image of a point = the original point + translation  
Example: the image of point A ( -2 , 4 ) by translation ( -1 , -5 ) is .....  
 $A' ( -2 + -1 , 4 + -5 ) = ( -3 , -1 )$
- ➔ The original point = the image - translation  
Example: if the image of point A is ( -1 , -2 ) by translation ( 2 , -3 ) , then  
the original point A = ( -1 - 2 , -2 - -3 ) = ( -3 , 1 )
- ➔ The translation = the image - the original point  
Example: if the image of point A ( 5 , -4 ) is ( -2 , 2 ) then  
the translation = ( -2 - 5 , 2 - -4 ) = ( -7 , 6 )

Rotation:

- ➔ The identity Rotation R ( 0 , **360°** ) ➔ the image of a point is **itself**
- ➔ The Rotation R ( 0 , **90°** ) = R ( 0 , **-270°** )  
the image of a point ➔ change sign of **Y** then exchange place of X and Y  
Example: the image of point A ( 2 , -4 ) by R ( 0 , 90° ) is A' ( 4 , 2 )
- ➔ The Rotation R ( 0 , **270°** ) = R ( 0 , **-90°** )  
the image of a point ➔ change sign of **X** then exchange place of X and Y  
Example: the image of point A ( 2 , -4 ) by R ( 0 , 270° ) is A' ( -4 , -2 )
- ➔ The Rotation R ( 0 , **180°** ) = R ( 0 , **-180°** )  
the image of a point ➔ change signs of **X** and **Y**  
Example: the image of point A ( 2 , -4 ) by R ( 0 , 180° ) is A' ( -2 , 4 )
- ➔ The Rotation clockwise ( the measure of angle is negative )  
The Rotation anticlockwise ( the measure of angle is positive )



## Choose the correct answer

## Unit 3

- 1 If the dimensions of a rectangle are  $3y$  and  $5y$  units , then what is its area?  
 (a)  $16y$  (b)  $15y^2$  (c)  $8y^2$  (d)  $8y$
- 2 The area of a square with a side length of 6 cm ..... the area of a square with a diagonal length of 8 cm.  
 (a)  $<$  (b)  $>$  (c)  $=$
- 3 A square with a diagonal length of 12 feet , its area = ..... square feet.  
 (a) 36 (b) 72 (c) 144 (d) 180
- 4 The product of the length of two diagonals of a square is 16 square meters. What is its area in square meters?  
 (a) 4 (b) 8 (c) 32 (d) 128
- 5 A square with diagonal length of 10 feet and a parallelogram with base length of 12 feet and the corresponding height is 6 feet , what is the sum of their areas ?  
 (a) 172 square feet (b) 160 square feet  
 (c) 122 square feet (d) 86 square feet
- 6 If the area of a square is 100 square meters , then the length of its side length is ..... meters.  
 (a) 100 (b) 10 (c) 25 (d) 5
- 7 If the area of a square is  $40.5 \text{ cm}^2$  , then what is the diagonal length in centimeters ?  
 (a) 5 (b) 4.5 (c) 9 (d) 20.25
- 8 A square has a side length of  $s$  and an area  $A$ . What is the area of the square whose diagonal is  $2s$  ?  
 (a)  $A$  (b)  $2A$  (c)  $4A$  (d)  $A^2$
- 9 If a rhombus with diagonal lengths of 6 inches and 10 inches , then what is its area ?  
 (a) 30 square inches (b) 60 square inches  
 (c) 16 square inches (d) 120 square inches



## Unit 3

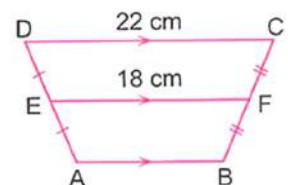
## Choose the correct answer

- 10 If the area of a rhombus is 28 square units , then what is the product of the diagonals lengths ?  
 (a) 14 (b) 28 (c) 56 (d) 112
- 11 A rhombus with an area of 90 square centimeters and the length of one of its diagonals is 12 cm , what is the length of the other diagonal ?  
 (a) 7.5 cm (b) 10 cm (c) 15 cm (d) 20 cm
- 12 A rhombus with a side length of 15 cm and diagonal lengths of 18 cm and 24 cm. What is its height ?  
 (a) 28.8 cm (b) 7.2 cm (c) 14.4 cm (d) 360 cm
- 13 The length of the middle base of a trapezium is 18 inches and its height is 5 inches , then its area = ..... square inches.  
 (a) 90 (b) 45 (c) 23 (d) 46
- 14 If a trapezium has an area of 100 square meters and its height is 5 meters , then the length of its middle base is equal to ..... meters.  
 (a) 10 (b) 20 (c) 95 (d) 15
- 15 A trapezium with area 30 square centimeters and a middle base length of 10 cm , its height = .....cm  
 (a) 7.5 (b) 15 (c) 300 (d) 3
- 16 A trapezium with parallel bases of length 16 feet and 12 feet , the length of its middle base is equal to ..... feet.  
 (a) 192 (b) 96 (c) 28 (d) 14
- 17 A trapezium with a middle base length of  $x$  cm and a height is equal to half the length of its middle base. What is its area in square centimeters?  
 (a)  $x^2$  (b)  $\frac{x^2}{4}$  (c)  $\frac{x^2}{2}$  (d)  $\frac{x^2}{8}$

18 In the opposite figure:

What is the length of AB in centimeters?

- (a) 14 (b) 20 (c) 26 (d) 28



## Unit 3

## Choose the correct answer

- 19 A trapezium with a height of 5.4 cm and the lengths of its parallel bases are 8 cm and 10 cm , has an area of ..... square centimeters.  
 (a) 48.6 (b) 54 (c) 97.2 (d) 432
- 20 A trapezium with an area of 162 square yards and the lengths of its two parallel bases are 17 yards and 19 yards , what is its height ?  
 (a) 4.5 yards (b) 8 yards (c) 9 yards (d) 18 yards
- 21 A trapezium with an area of 54 square centimeters , the length of one of its parallel bases 10 cm and its height of 6 cm. What is the length of the other base?  
 (a) 10 cm (b) 8 cm (c) 6 cm (d) 12 cm
- 22 What is the image of the point  $(-2, 4)$  by reflection in the  $X$ -axis ?  
 (a)  $(-2, -4)$  (b)  $(2, 4)$  (c)  $(-4, 2)$  (d)  $(4, 2)$
- 23 What is the point that if it is reflected in the  $X$ -axis its image becomes  $(3, 0)$ ?  
 (a)  $(0, 3)$  (b)  $(3, 0)$  (c)  $(-3, 0)$  (d)  $(0, -3)$
- 24 Which of the following points is the same point by reflection in the  $X$ -axis ?  
 (a)  $(-3, 0)$  (b)  $(0, -3)$  (c)  $(1, -3)$  (d)  $(-3, 1)$
- 25 If the image of the point  $(7, 3a - 12)$  remains the same point when reflected in the  $X$ -axis, what is the value of  $a$  ?  
 (a)  $-4$  (b)  $3$  (c)  $12$  (d)  $4$
- 26 What is the image of the point  $(a, b)$  by reflection in the  $y$ -axis ?  
 (a)  $(a, -b)$  (b)  $(-a, b)$  (c)  $(b, -a)$  (d)  $(-b, a)$
- 27 What is the image of the point  $(4, -1)$  by reflection in the  $y$ -axis?  
 (a)  $(-1, 4)$  (b)  $(4, 1)$  (c)  $(-4, -1)$  (d)  $(-1, -4)$
- 28 The image of the point ..... is the same point by reflection in the  $y$ -axis  
 (a)  $(-3, 0)$  (b)  $(0, 2)$  (c)  $(-4, 10)$  (d)  $(-2, -5)$

## Choose the correct answer

## Unit 3

- 29 What is the image of the point  $(4, -3)$  by reflection in the  $X$ -axis followed by reflection in the  $y$ -axis?  
 (a)  $(-4, 3)$  (b)  $(4, 3)$  (c)  $(-4, -3)$  (d)  $(-3, -4)$
- 30 What is the image of the point  $(-7, -2)$  by reflection in the  $y$ -axis followed by reflection in the  $X$ -axis?  
 (a)  $(7, 2)$  (b)  $(-7, 2)$  (c)  $(7, -2)$  (d)  $(-2, 7)$
- 31 What is the image of the origin  $O$  by reflection in the  $X$ -axis followed by reflection in the  $y$ -axis?  
 (a)  $(1, 1)$  (b)  $(0, 0)$  (c)  $(1, 0)$  (d)  $(0, 1)$
- 32 If the image of the point  $(1, 2)$  by reflection in the  $X$ -axis followed by reflection in the  $y$ -axis is  $(a + 1, a)$ , what is the value of  $a$ ?  
 (a) 1 (b) 2 (c) -1 (d) -2
- 33 What is the image of the point  $(-3, 5)$  by reflection in the  $X$ -axis followed by reflection in the  $X$ -axis again?  
 (a)  $(3, -5)$  (b)  $(-3, -5)$  (c)  $(-3, 5)$  (d)  $(3, 5)$
- 34 If the image of the point  $(-5, 4)$  by reflection in the  $y$ -axis followed by reflection in the  $y$ -axis again is  $(a, b)$ , what is the value of  $b + a$ ?  
 (a) -5 (b) -4 (c) -1 (d) 1
- 35 The identity rotation is a rotation around the origin by an angle of measure .....  
 (a)  $90^\circ$  (b)  $180^\circ$  (c)  $270^\circ$  (d)  $360^\circ$
- 36 The rotation that makes the image of a shape is the shape itself is a rotation around the origin by an angle of measure .....  
 (a)  $90^\circ$  (b)  $-90^\circ$  (c)  $180^\circ$  (d)  $360^\circ$
- 37 What is the image of the point  $(-4, 0)$  by rotation  $R(O, 90^\circ)$  followed by rotation  $R(O, -90^\circ)$ ?  
 (a)  $(-4, 0)$  (b)  $(4, 0)$  (c)  $(0, 4)$  (d)  $(0, -4)$



Choose the correct answer

Unit 3

- 38 The rotation  $R(O, 90^\circ)$  followed by rotation  $R(O, 90^\circ)$  is equivalent to the rotation .....
- (a)  $R(O, 180^\circ)$  (b)  $R(O, 90^\circ)$  (c)  $R(O, 270^\circ)$  (d)  $R(O, -270^\circ)$
- 39 What is the image of the point  $(3, -4)$  by rotation  $R(O, 90^\circ)$  ?
- (a)  $(4, -3)$  (b)  $(4, 3)$  (c)  $(3, 4)$  (d)  $(-3, -4)$
- 40 The image of the point  $(-7, 5)$  by rotation  $R(O, -90^\circ)$  is .....
- (a)  $(5, 7)$  (b)  $(7, -5)$  (c)  $(-5, -7)$  (d)  $(-5, 7)$
- 41 What is the image of the point  $(3, -9)$  by rotation  $R(O, 180^\circ)$  followed by rotation  $R(O, -90^\circ)$  ?
- (a)  $(-3, -9)$  (b)  $(-9, -3)$  (c)  $(-3, 9)$  (d)  $(9, 3)$
- 42 What is the image of the point  $(-4, 5)$  under rotation  $R(O, 90^\circ)$  followed by rotation  $R(O, 180^\circ)$  ?
- (a)  $(5, 4)$  (b)  $(5, -4)$  (c)  $(4, -5)$  (d)  $(-5, -4)$
- 43 What is the image of the point  $(2, -5)$  by rotation around the origin  $O$  with an angle of measure  $90^\circ$  anticlockwise?
- (a)  $(-5, -2)$  (b)  $(5, 2)$  (c)  $(-2, 5)$  (d)  $(2, -5)$
- 44 What is the image of the point  $(2, -5)$  by rotation around the origin  $O$  with an angle of measure  $90^\circ$  clockwise?
- (a)  $(-5, -2)$  (b)  $(5, 2)$  (c)  $(-2, 5)$  (d)  $(2, -5)$
- 45 What is the image of the point  $(-2, 1)$  by rotation  $R(O, 180^\circ)$  ?
- (a)  $(2, 1)$  (b)  $(1, 2)$  (c)  $(-1, -2)$  (d)  $(2, -1)$
- 46 What is the point that whose image by rotation  $R(O, -90^\circ)$  is  $(2, 1)$  ?
- (a)  $(1, -2)$  (b)  $(1, 2)$  (c)  $(-1, 2)$  (d)  $(-1, -2)$

## Unit 3

## Choose the correct answer

- 47 What is the point whose image by rotation  $R(O, 180^\circ)$  is  $(-3, 1)$  ?  
 (a)  $(3, 1)$  (b)  $(1, 3)$  (c)  $(-1, 3)$  (d)  $(3, -1)$
- 48 What is the rotation that makes the image of the point  $A(3, -2)$  is the point  $\hat{A}(-3, 2)$  ?  
 (a)  $R(O, 90^\circ)$  (b)  $R(O, -90^\circ)$  (c)  $R(O, 270^\circ)$  (d)  $R(O, 180^\circ)$
- 49 What rotation makes the image of the point  $A(2, -6)$  become  $\hat{A}(-6, -2)$  ?  
 (a)  $R(O, -180^\circ)$  (b)  $R(O, -90^\circ)$  (c)  $R(O, 90^\circ)$  (d)  $R(O, 180^\circ)$
- 50 If the point  $\hat{A}(x+1, -2)$  is the image of the point  $A(-4, 2)$  by rotation around the origin  $O$  by an angle of measure  $180^\circ$ , what is the value of  $x$  ?  
 (a) 3 (b) -1 (c) -2 (d) -5
- 51 What is the image of the point  $(5, -3)$  by moving 3 units to the left?  
 (a)  $(5, 0)$  (b)  $(2, -3)$  (c)  $(5, -6)$  (d)  $(8, -3)$
- 52 What is the image of the point  $(2, -3)$  by translation 3 units upwards ?  
 (a)  $(5, -3)$  (b)  $(5, -6)$  (c)  $(2, 0)$  (d)  $(5, 0)$
- 53 What is the image of the point  $(1, 1)$  when moving 4 units downwards followed by moving 3 units to the right ?  
 (a)  $(4, -3)$  (b)  $(4, 5)$  (c)  $(-2, -3)$  (d)  $(-4, -3)$
- 54 What is the image of the point  $A(5, 3)$  by a translation of 4 units upwards followed by a translation of 3 units to the left ?  
 (a)  $(4, -3)$  (b)  $(2, 7)$  (c)  $(9, 0)$  (d)  $(8, 7)$
- 55 What is the image of the point  $(7, -4)$  by translation of 5 units in the negative direction of the  $X$ -axis ?  
 (a)  $(2, -9)$  (b)  $(7, -9)$  (c)  $(7, 1)$  (d)  $(2, -4)$
- 56 What is the image of the point  $A(5, -3)$  by a translation of 3 units in the negative direction of the  $X$ -axis followed by a translation of 3 units in the positive direction of the  $X$ -axis?  
 (a)  $(5, -3)$  (b)  $(3, -3)$  (c)  $(2, -3)$  (d)  $(2, -6)$

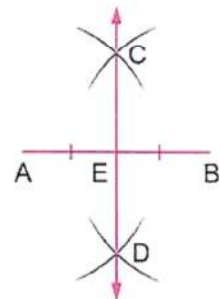
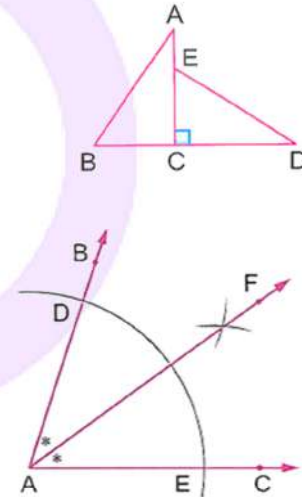
## Choose the correct answer

- 57 What is the image of the point  $(-1, 4)$  after a translation of 1 unit upwards followed by a translation of 4 units downwards?  
 (a)  $(0, 0)$  (b)  $(-2, 8)$  (c)  $(2, -8)$  (d)  $(-1, 1)$
- 58 What geometrical transformation is equivalent to translation of 3 units in the positive direction of the  $x$ -axis followed by 4 units in the negative direction of the  $y$ -axis?  
 (a)  $(4, 3)$  (b)  $(3, 4)$  (c)  $(-3, 4)$  (d)  $(3, -4)$
- 59 What geometrical transformation is equivalent to translation  $(1, 5)$  followed by translation  $(0, 4)$ ?  
 (a)  $(1, 1)$  (b)  $(1, 9)$  (c)  $(-1, -1)$  (d)  $(5, 5)$
- 60 What is the image of the point A  $(2, 1)$  by the translation  $(0, 2)$  followed by the translation  $(2, 0)$ ?  
 (a)  $(2, 2)$  (b)  $(-2, -2)$  (c)  $(4, 3)$  (d)  $(3, 4)$
- 61 What is the image of the point  $(a, b)$  by translation  $(x, y) \longrightarrow (x + 2, y - 3)$ ?  
 (a)  $(a - 3, b + 2)$  (b)  $(a + 2, b - 3)$   
 (c)  $(2, -3)$  (d)  $(a + 2, b + 3)$
- 62 What is the image of the point  $(-4, 1)$  by translation  $(x, y) \longrightarrow (x + 1, y - 4)$ ?  
 (a)  $(-5, -4)$  (b)  $(-5, 5)$  (c)  $(-3, -3)$  (d)  $(2, -8)$
- 63 What is the image of the point  $(-1, 5)$  by translation  $(x, y) \longrightarrow (x + 3, y - 1)$  followed by translation  $(-5, 0)$ ?  
 (a)  $(-2, 6)$  (b)  $(-7, 4)$  (c)  $(7, 4)$  (d)  $(-3, 4)$
- 64 In the triangle DEF with vertices D  $(1, 4)$ , E  $(-4, 2)$ , F  $(-3, -3)$ , which of the following points is one of the vertices of the triangle DEF by the translation  $(x, y) \longrightarrow (x - 2, y + 1)$ ?  
 (a)  $(-2, 1)$  (b)  $(-5, -2)$  (c)  $(3, 3)$  (d)  $(-6, -1)$



## Choose the correct answer

- 65 If the  $\hat{A}$  (3 , 5) is the image of the point A by translation  $(x , y) \longrightarrow (x - 1 , y + 2)$  , then the point A is .....
- (a) (2 , 7) (b) (4 , 3) (c) (5 , 3) (d) (4 , - 3)
- 66 What is the translation that makes the point  $\hat{A}$  (- 4 , 6) is the image of the point A (2 , - 1) ?
- (a) (- 6 , 7) (b) (- 2 , 5) (c) (6 , - 7) (d) (- 5 , 8)
- 67 If (a , - 1) is the image of (2 , 4) by the translation  $(x , y) \longrightarrow (x + 1 , y - b)$  , then (a , b) = .....
- (a) (3 , 3) (b) (1 , 3) (c) (3 , 5) (d) (1 , - 5)
- 68 In the opposite figure :
- $\Delta ABC$  is the image of  $\Delta DEC$  , which is right-angled at C , by rotation around C by an angle of measure .....
- (a)  $90^\circ$  (b)  $- 90^\circ$  (c)  $180^\circ$  (d)  $360^\circ$
- 69 First : When bisecting  $\angle BAC$  with a compass , you find that :  $m(\angle BAF) = \dots\dots\dots$
- (a)  $m(\angle BFA)$  (b)  $m(\angle EAF)$  (c)  $m(\angle EFA)$  (d)  $m(\angle BAC)$
- Second : The length of  $\overline{EF}$  must be equal to the length of .....
- (a)  $\overline{DF}$  (b)  $\overline{AD}$  (c)  $\overline{AE}$  (d)  $\overline{AF}$
- 70 When bisecting the line segment  $\overline{AB}$  by a compass , you must have .....
- (a)  $AC < \frac{1}{2} AB$  (b)  $AC < AD$  (c)  $AC > \frac{1}{2} AB$  (d)  $AC < AE$





## Unit 3

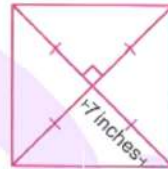
**Answer the Following**

- 1 A square has a diagonal length of 8 feet , and a parallelogram has a base length of 10 feet and the corresponding height is equal to 4 feet. Find the sum of their areas.
- 2 Which is greater in area ?  
A rhombus of diagonals lengths of 10 cm and 8 cm or a rectangle its length 9 cm and its width 5 cm.
- 3 Which has a greater area ?  
A square with a diagonal length of 12 cm or a trapezium with the lengths of its parallel bases are 6 cm and 10 cm and its height 6 cm.
- 4 A square piece of agricultural land with a diagonal length of 8 kilometers. Find its area.
- 5 A square has a diagonal length of  $(4x + 3)$  units. Calculate its area in terms of  $x$
- 6 A rhombus has diagonals of lengths  $(3x + 6)$  meters and  $(x + 1)$  meters.  
Find its area in terms of  $x$  , and then find the numerical value of the area when  $x = 1$
- 7 Find the diagonal length of the square whose area is equal to the area of a rhombus with diagonal lengths of 4 cm and 16 cm.
- 8 If the area of a rhombus is 120 square centimeters and the length of one of its diagonals is 10 cm , then find the length of the other diagonal.
- 9 Find the area of the trapezium , the lengths of its parallel bases are 7 inches and 9 inches , and its height of 10 inches.
- 10 A trapezium has an area of 63 square feet and the lengths of its parallel bases are 10 feet and 8 feet. Calculate its height.
- 11 A trapezium with an area of 280 square feet and a height of 10 feet. If the length of one of its parallel bases is 22 feet , then find the length of its other base.

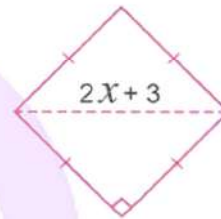
## Answer the Following

- 12 A trapezium has an area of 105 square centimeters and a height of 7 centimeters. If the ratio between the lengths of its two bases is 2 : 3. What is the length of each base?
- 13 A trapezium with base lengths of 6 meters ,  $x$  meters , and a height of 9 meters , has an area of 72 square meters. Find the value of  $x$ .

- 14 Calculate the area of the opposite square.



- 15 Find the area of the opposite square in terms of  $x$  , then find the numerical value of the area when  $x = 3$

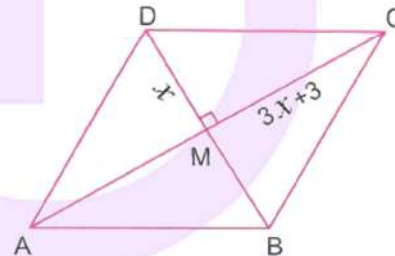


- 16 In the opposite figure :

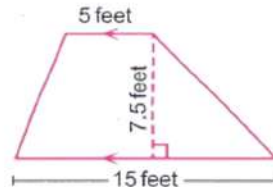
ABCD is a rhombus its diagonals intersecting at M.

$$MD = x, MC = 3x + 3$$

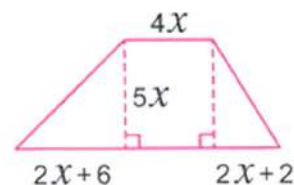
Find the area of the rhombus in terms of  $x$  , then calculate the numerical value of the area when  $x = 7$



- 17 Find the area of the opposite trapezium.



- 18 Find in terms of  $x$  the area of the opposite trapezium. Then find the numerical value of the area when  $x = 2$



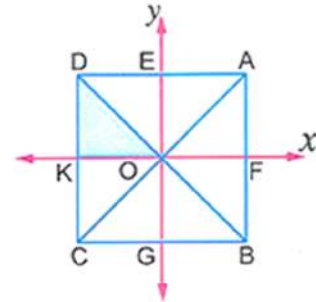
## Unit 3

## Answer the Following

19 In the opposite figure :

What is the image of  $\triangle DKO$  under :

- ① reflection in the  $X$ -axis
- ② reflection in the  $y$ -axis
- ③ reflection in the  $X$ -axis followed by reflection in the  $y$ -axis
- ④ rotation  $R(O, 90^\circ)$
- ⑤ rotation  $R(O, -90^\circ)$
- ⑥ rotation  $R(O, 180^\circ)$ .



- 20 Draw the square ABCD with vertices  $A(-1, 2)$ ,  $B(1, 0)$ ,  $C(3, 2)$  and  $D(1, 4)$  then draw its image by reflection in the  $X$ -axis.
- 21 Draw the trapezium ABCD where  $A(-1, 4)$ ,  $B(-5, 4)$ ,  $C(-4, 2)$ ,  $D(-2, 2)$  and then find its image by reflection in the  $y$ -axis.
- 22 Draw the triangle ABC where  $A(-2, 2)$ ,  $B(1, 0)$ , and  $C(1, 2)$ , then draw its image by reflection in the  $X$ -axis followed by reflection in the  $y$ -axis.
- 23 Draw on the grid, the rectangle ABCD where  $A(1, 1)$ ,  $B(3, 1)$ ,  $C(3, 6)$ ,  $D(1, 6)$ , then find its image by rotation  $R(O, 90^\circ)$ .
- 24 Draw  $\triangle ABC$  where  $A(0, 2)$ ,  $B(4, 1)$ , and  $C(3, 4)$ , then draw its image by rotation  $R(O, -180^\circ)$  followed by rotation  $R(O, 90^\circ)$ .
- 25 Draw in the coordinate plane  $\overline{AB}$  where  $A(-2, 0)$  and  $B(1, 3)$ , then draw the image of  $\overline{AB}$  by rotation  $R(O, 90^\circ)$  followed by rotation  $R(O, 180^\circ)$ .
- 26 Find the image of the polygon ABCD by rotation  $R(O, -270^\circ)$  where  $A(2, 0)$ ,  $B(2, 4)$ ,  $C(0, 4)$ , and  $D(0, 2)$ .



## Answer the Following

- 27 Draw the triangle ABC with vertices A  $(-4, 2)$ , B  $(-1, 0)$ , and C  $(0, 4)$

Then find its image under the following geometrical transformation :

1 Translation 4 units downwards.

2 Translation  $(2, -1)$

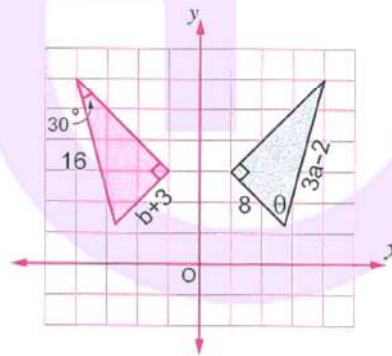
- 28 Draw  $\triangle ABC$  where A  $(-3, -1)$ , B  $(2, 0)$  and C  $(1, 3)$ , then draw its image by translation  $(-3, 1)$  followed by translation  $(-1, 2)$ .

- 29 Draw  $\triangle RST$  where R  $(-3, -3)$ , S  $(-4, 0)$ , T  $(0, 0)$  and then draw its image by translation  $(X, y) \longrightarrow (X-1, y+3)$  followed by translation  $(X, y) \longrightarrow (X+4, y-1)$

- 30 Draw the rectangle ABCD in the coordinate plane where A  $(3, -1)$ , B  $(3, -3)$ , C  $(-1, -3)$ , and D  $(-1, -1)$ , then draw its image by translation  $(-3, 4)$  followed by translation  $(X, y) \longrightarrow (X+1, y-1)$

- 31 In the opposite figure :

If one of the triangles is the image of the other by reflection in the y-axis , find the values of: a , b and  $\theta$ .

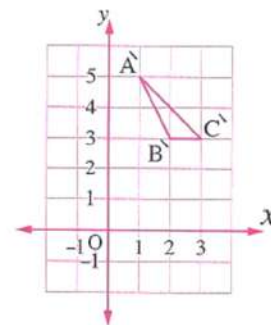


- 32 In the opposite figure :

If  $\triangle A'B'C'$  is the image of  $\triangle ABC$

by translation  $(X, y) \longrightarrow (X+3, y+4)$

draw  $\triangle ABC$



- 33 Draw  $\overline{AB}$  with a length of 7 cm , then bisect it using a ruler and compass at point C , illustrating the steps of the solution.

## Answer the Following

- 34 Draw a line segment of length 10 cm , then divide it using a ruler and compass into 4 equal segments. (Verify by the ruler that the four segments are equal).
- 35 Draw an angle of measure  $130^\circ$  , then bisect it using a ruler and compass verify it by measuring.
- 36 Draw an angle with vertex A and its measure  $120^\circ$  , then divide it into 4 equal angles using a ruler and compass.
- 37 Draw an equilateral triangle with a perimeter of 18 cm.
- 38 Draw  $\triangle XYZ$  where  $XY = 5$  cm ,  $YZ = 4$  cm , and  $XZ = 3$  cm , then determine the type of the triangle according to the measures of its angles.
- 39 Draw the triangle ABC where  $m(\angle ABC) = 40^\circ$  ,  $m(\angle ACB) = 70^\circ$  , and  $BC = 5$  cm , then determine by measuring the type of triangle according to the lengths of its sides.
- 40 Draw the triangle LMN where  $LM = 3$  cm ,  $m(\angle L) = 90^\circ$  , and  $m(\angle M) = 30^\circ$  . Find the length of  $\overline{MN}$ .
- 41 Draw  $\triangle ABC$  in which the length of  $\overline{AB}$  is 5 cm , the length of  $\overline{BC}$  is 4 cm and  $m(\angle ABC) = 50^\circ$  , then determine by measuring the type of triangle according to the measures of its angles.
- 42 Draw  $\triangle ABC$  where  $AB = 6$  cm ,  $m(\angle A) = 90^\circ$  , and  $m(\angle B) = 45^\circ$  , then bisect  $\angle A$  with the bisector  $\overline{AD}$  which intersects  $\overline{BC}$  at point D. Determine the type of the triangle ABD according to the lengths of its sides.

شرح خطوات الحل على قناة اليوتيوب



Math With Hoda Ismail

## The Answers

Choose the correct answer:

- |       |       |       |           |       |
|-------|-------|-------|-----------|-------|
| 1. B  | 2. B  | 3. B  | 4. B      | 5. C  |
| 6. B  | 7. C  | 8. B  | 9. A      | 10. C |
| 11. C | 12. C | 13. A | 14. B     | 15. D |
| 16. D | 17. C | 18. A | 19. 4     | 20. C |
| 21. B | 22. A | 23. B | 24. A     | 25. D |
| 26. B | 27. C | 28. B | 29. A     | 30. A |
| 31. B | 32. D | 33. C | 34. C     | 35. D |
| 36. D | 37. A | 38. A | 39. B     | 40. A |
| 41. D | 42. A | 43. B | 44. A     | 45. A |
| 46. C | 47. D | 48. D | 49. B     | 50. A |
| 51. B | 52. C | 53. A | 54. B     | 55. D |
| 56. A | 57. D | 58. D | 59. B     | 60. C |
| 61. B | 62. C | 63. D | 64. B     | 65. B |
| 66. A | 67. C | 68. A | 69. B , A | 70. C |

Answer the following:

1) 72 square feet

2) area of rhombus = 40 cm<sup>2</sup> , area of rectangle = 45 cm<sup>2</sup>

The greater area is the rectangle

3) area of square = 72 cm<sup>2</sup> , area of trapezium = 48 cm<sup>2</sup>

The greater area is the square

4) 32 km<sup>2</sup>

5)  $4X^2 + 12X + \text{---}$

6) 9 m<sup>2</sup>

7) the diagonal = 8 m

8) the diagonal = 24 cm

9) 80 square inches

10) the height = 7 feet

11) 34 feet

12) b<sub>1</sub> = 12 cm , b<sub>2</sub> = 18 cm

13) x = 10



## The Answers

14) 98 square inches

15) Area = 40.5

16) area =  $6X^2 + 6X = 336$

17) 75 square feet

18) area =  $30X^2 + 20X = 160$

19) 1.  $\triangle CKO$

2.  $\triangle AFO$

3.  $\triangle BFO$

4.  $\triangle CGO$

5.  $\triangle AEO$

6.  $\triangle BFO$

20)  $A'(-1, -2)$  ,  $B'(1, 0)$  ,  $C'(3, -2)$  ,  $D'(1, 4)$

21)  $A'(1, 4)$  ,  $B'(5, 4)$  ,  $C'(4, 2)$  ,  $D'(2, 2)$

22)  $A'(2, -2)$  ,  $B'(-1, 0)$  ,  $C'(-1, -2)$

23)  $A'(-1, 1)$  ,  $B'(-1, 3)$  ,  $C'(-6, 3)$  ,  $D'(-6, 1)$

24)  $A'(2, 0)$  ,  $B'(1, -4)$  ,  $C'(4, -3)$

25)  $A'(0, 2)$  ,  $B'(3, -1)$

26)  $A'(0, 2)$  ,  $B'(-4, 2)$  ,  $C'(-4, 0)$  ,  $D'(-2, 0)$

27) 1)  $A'(-4, -2)$  ,  $B'(-1, -4)$  ,  $C'(0, 0)$

2)  $A'(-2, 1)$  ,  $B'(1, -1)$  ,  $C'(2, 3)$

28)  $A'(-7, 2)$  ,  $B'(-2, 3)$  ,  $C'(-3, 6)$

29)  $R'(0, -1)$  ,  $S'(-1, 2)$  ,  $T'(3, 2)$

30)  $A'(1, 2)$  ,  $B'(1, 0)$  ,  $C'(-3, 0)$  ,  $D'(-3, 2)$

31)  $A = 6$  ,  $B = 5$  ,  $\theta = 60^\circ$

32)  $A(-2, 1)$  ,  $B'(-1, -1)$  ,  $C'(0, -1)$

33) to 42) Draw by yourself

حمل الآن

مجاناً وحصرياً

# المراجعة رقم (5)

## اختبار شهر ابريل



**Unit 3****Areas**

$$\text{Area of rectangle} = L \times W$$

$$\text{Area of triangle} = \frac{1}{2} \times \text{base} \times \text{height}$$

$$\text{Area of parallelogram} = \text{base} \times \text{height}$$

$$\text{Area of rhombus} = \text{base} \times \text{height}$$

$$\text{Area of rhombus} = \frac{1}{2} \times \text{diagonal}_1 \times \text{diagonal}_2 = \frac{1}{2} \times d \times d$$

$$d_1 = \frac{2 \times \text{area}}{d_2} \quad d_2 = \frac{2 \times \text{area}}{d_1}$$

$$\text{Area of square} = S \times S = S^2$$

$$\text{Area of square} = \frac{1}{2} \times \text{diagonal}_1 \times \text{diagonal}_2 = \frac{1}{2} \times d^2$$

$$d = \sqrt{2 \times \text{area}}$$

$$\text{Area of trapezium} = \frac{1}{2} \times (b_1 + b_2) \times h$$

$$\text{Area of trapezium} = \text{middle base} \times h$$

$$\text{Middle base of trapezium} = \frac{1}{2} \times (b_1 + b_2)$$

$$\text{base}_1 \text{ of trapezium} = (2 \times \text{middle base}) - \text{base}_2$$

## Reflection

$(X,Y)$  reflect by X-axis  $(X,-Y)$

$(X,Y)$  reflect by Y-axis  $(-X,Y)$

$(X,0)$  reflect by X-axis  $(X,0)$  same point.

$(0,Y)$  reflect by Y-axis  $(0,Y)$  same point.

## Translation

Change X-coordinate

To move the point left & right

Change Y-coordinate

To move the point up & down

## Rotation

$(X,Y)$  by rotation  $(O, 90^\circ)$   $(-Y,X)$

$(X,Y)$  by rotation  $(O, -90^\circ), (O, 270^\circ)$   $(Y,-X)$

$(X,Y)$  by rotation  $(O, +180^\circ)$   $(-X,-Y)$

$(X,Y)$  by rotation  $(O, +360^\circ)$   $(X,Y)$

**Q1 Choose the correct answer:-**

1) If the area of rhombus is  $100 \text{ cm}^2$  , what is the product of its diagonals ?

- a) 50                      b) 25                      c) 100                      d) 200

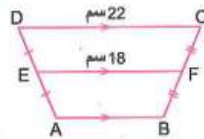
2) If the area of rhombus is  $20 \text{ cm}^2$  and the length of one of its diagonals is  $5 \text{ cm}$  , what is the length of the other diagonal diagonals ?

- a) 4cm                      b) 8cm                      c) 10cm                      d) 15cm

3) Area of square whose side length ..... area of square whose diagonal is  $5 \text{ cm}$

- a) =                      b) >                      c) <

4) from the opposite figure , what is the length of AB ?



- a) 26cm                      b) 28cm                      c) 20cm                      d) 14cm

5) Which of the following is the image of the point  $(-1, 3)$  by reflection in the X-axis ?

- a)  $(-1, -3)$                       b)  $(1, -3)$                       c)  $(1, 3)$                       d)  $(3, -1)$

6) Which of the following is the image of the point  $(a, b)$  by reflection in the X-axis ?

- a)  $(-a, -b)$                       b)  $(-a, b)$                       c)  $(a, -b)$                       d)  $(b, -a)$

7) Which of the following points remains the same when reflected in the Y-axis ?

- a)  $(2, -3)$                       b)  $(3, 2)$                       c)  $(0, 7)$                       d)  $(-3, 0)$



- 8) Which of the following points remains the same when reflected in the X-axis ?  
a) (2, -3)      b) (3, 2)      c) (0, 7)      d) (-3, 0)
- 9) If the image of the point (7, 3a-12) is the same when reflected in X-axis , what is the value of a?  
a) 4      b) 12      c) -4      d) 3
- 10) What is the image of the point (2, -3) by reflection in the X-axis followed by reflection in the Y-axis ?  
a) (-2, -3)      b) (2, 3)      c) (-2, 3)      d) (3, 2)
- 11) What is the image of the point (1, 7) by translation of 3 units in the positive direction of Y-axis ?  
a) (4, 7)      b) (1, 10)      c) (1, 4)      d) (-2, 7)
- 12) What is the image of the point (5, -2) by translation of 5 units in the negative direction of X-axis ?  
a) (10, -2)      b) (5, -7)      c) (5, -3)      d) (0, -2)
- 13) What is the image of the point (2, -1) by translation (x-3 , y+4)?  
a) (-3, 4)      b) (-1, 3)      c) (-1, 5)      d) (5, 3)
- 14) What is the image of the point (0, -3) by translation (-1, 2)?  
a) (-1, 1)      b) (-1, -1)      c) (1, 1)      d) (1, -1)
- 15) What is the image of the point (-1, 0) by translation (1, 0) followed by translation (2, -3)?  
a) (0, 0)      b) (1, 0)      c) (-1, 0)      d) (2, -3)
- 16) What is the image of the point (-7, 2) by rotation  $R(O, 180^\circ)$  ?  
a) (7, -2)      b) (-2, 7)      c) (-2, -7)      d) (-7, -2)



- 17) Identify rotation is the rotation around the origin  $O$  by an angle of measure .....
- a)  $90^\circ$       b)  $180^\circ$       c)  $270^\circ$       d)  $360^\circ$
- 18) What is the image of the point  $(-4, 2)$  when rotated around the origin  $O$  by an angle of measure  $90^\circ$  anti-clockwise ?
- a)  $(-2, 4)$       b)  $(-2, -4)$       c)  $(4, 2)$       d)  $(-4, -2)$
- 19) Which of the following rotations makes the point  $A'$   $(X, -Y)$  the image of  $A$   $(X, -Y)$  ?
- a)  $R(O, 90^\circ)$       b)  $R(O, -90^\circ)$       c)  $R(O, 180^\circ)$       d)  $R(O, 360^\circ)$
- 20) What is the image of the point  $(-4, 5)$  under rotation  $R(O, 90^\circ)$  followed by rotation  $R(O, 180^\circ)$  ?
- a)  $(5, 4)$       b)  $(5, -4)$       c)  $(4, -5)$       d)  $(-5, -4)$

## Q2 Answer the following :-

- 1) Find the area of the following figures :-

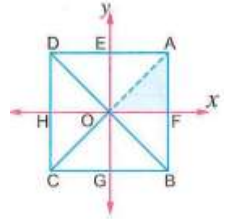


- 2) Find the area of rhombus with diagonal lengths of 6 cm and 10 cm.
- 3) Find the height of a rhombus with side length of 15 cm and diagonal lengths of 18 cm and 24 cm.
- 4) A trapezium with a height of 3 cm and a middle base length of 10 cm, find its area.
- 5) A trapezium has an area of 63 square meter and the length of its parallel bases are 10 m and 8 m. Calculate its height.

6) From the opposite figure :-

a) The image of  $\triangle AFO$  by reflection in the Y-axis is .....

- a)  $\triangle AOE$       b)  $\triangle DHO$       c)  $\triangle BFO$       d)  $\triangle OBG$



b) The image of  $\triangle AFO$  by reflection in the X-axis is .....

- a)  $\triangle BFO$       b)  $\triangle AOE$       c)  $\triangle DHO$       d)  $\triangle CHO$

7) Draw an angle whose measure is  $45^\circ$  then bisect it.

8) Draw an angle whose measure is  $120^\circ$  then bisect it.

9) Draw line segment AB whose length = 5cm then bisect it.

10) Draw the triangle ABC that  $AB=7\text{cm}$  ,  $BC=9\text{cm}$  ,  $AC=4\text{cm}$  , then determine the type of triangle according its angles.

11) Draw the triangle ABC that  $AB=5\text{cm}$  ,  $m(\angle A)=120^\circ$  ,  $m(\angle B)=30^\circ$  , then determine the type of triangle according its sides.

12) Draw the triangle ABC that  $AB=7\text{cm}$  ,  $BC=5\text{cm}$  ,  $m(\angle ABC)=80^\circ$ .

13) Draw the triangle ABC that  $A(-6,6)$  ,  $B(-2,2)$  ,  $C(4,1)$  , then draw its image by reflection Y-axis.

- 14)** Draw the triangle ABC with vertices: A(4,4) , B(0,2) , C(6,-2) , then draw its image by translation (X-4 , Y+1).
- 15)** Draw the triangle ABC with vertices: A (-1,2), B (3,1),C (0,4), then draw its image under rotation R (O,90°)

**Unit 4****Q1 Choose the correct answer:-**

- 1) Drawing a card from a set of identical numbered cards without knowing the numbers written on the cards :
- a) a random experiment      b) not a random experiment      c) an impossible event      d) a certain event
- 2) Selecting a ball from a basket containing 5 identical balls all are yellow :
- a) a random experiment      b) not a random experiment      c) an impossible event      d) a simple event
- 3) In the experiment of choosing a digit of the number 5742 randomly , what is the sample space ?
- a) {2, 4, 5, }      b) {2, 4, 5, 7}      c) {5742}      d) {57, 74, 42}
- 4) In the experiment of rolling a fair die once, which of the following events is a simple event ?
- a) event of getting a number greater than 6      b) event of getting an even prime number
- c) event of getting a number less than or equal to 2      d) event of getting an odd number

- 5) When drawing a card from 10 identical cards numbered from 1 to 10 , which of the following is the event of drawing a number divisible by 2 ?
- a) {2, 4, 6, 8, }    b) {2, 6}    c) {2, 4, 6, 8, 10}    d) {2, 4, 6}
- 6) In the experiment of rolling a fair die once, and observing the number shown on the upper face , which of the following events is a certain event ?
- a) {2, 4, 6}    b) {1}    c) {1, 3, 5}    d) {1, 2, 3, 4, 5, 6}
- 7) If you are thinking of purchasing one pen from a set of identical pens containing 5 red pens, 2 blue pens, and 3 black pens, and you select this pen randomly what is the probability that the pen is blue?
- a)  $\frac{1}{4}$     b)  $\frac{1}{5}$     c)  $\frac{2}{15}$     d)  $\frac{1}{15}$
- 8) In an experiment of rolling a fair die once , what is the probability of getting a number divisible by 2 ?
- a) zero    b)  $33\frac{1}{3}\%$     c) 50 %    d) 70 %
- 9) If A is an event from a random experiment with equal chances of occurrence, and the probability of event A is 40%, the number of elements of the sample space is 15, what is the number of Elements of event A ?
- a) 2    b) 4    c) 6    d) 10



- 10) A ball is drawn randomly from a box containing 35 identical balls, of which 7 are white and the remainder are red and black, What is the probability that the drawn ball is not white ?
- a)  $\frac{1}{6}$       b)  $\frac{1}{5}$       c)  $\frac{4}{5}$       d)  $\frac{34}{35}$
- 11) A card carrying a letter from the word "NORHAN" is drawn randomly. What is the probability that this letter is (N)?
- a)  $\frac{1}{6}$       b)  $\frac{1}{3}$       c)  $\frac{2}{3}$       d)  $\frac{2}{5}$
- 12) In an experiment of rolling a fair die once, what is the probability of appearing a number less than 5?
- a)  $\frac{1}{6}$       b)  $\frac{1}{3}$       c)  $\frac{2}{3}$       d)  $\frac{1}{2}$
- 13) Which of the following could be a probability of an event occurring?
- a) 1.2      b) -0.4      c)  $\frac{2}{3}$       d) 213%
- 14) In an experiment of rolling a fair die and observing the upper face, the probability of rolling a number that is not equal to 2 is
- a)  $\frac{1}{6}$       b)  $\frac{1}{3}$       c)  $\frac{2}{3}$       d)  $\frac{5}{6}$

- 15) If a fair coin is tossed 400 times, the closest number of times that heads is expected to appear from the following is
- a) 300                      b) 90                      c) 188                      d) 270

## Q2 Complete the following:-

- 1) In the experiment of tossing a fair coin twice in consecutive where the head is H and the tail is T, the sample space for this experiment is .....
- 2) In the experiment of rolling a fair die twice in consecutive and observing the number showing on the upper face, the number of elements in the sample space is .....
- 3) In the experiment of forming a 2-digit number from the set of numbers {2, 3, 4} the number of elements in the sample space is .....
- 4) If the probability of an event occurring equals the probability of the same event not occurring, then the probability of that event = .....
- 5) The probability of an impossible event = .....
- 6) The probability of a certain event = .....

### Q3 Answer the following:-

1) A card was drawn randomly from a set of identical cards numbered from 5 to 14 , find the probability that the drawn card carries:

- a) an odd number.
- b) An even number greater than 9.
- c) A prime number.
- d) A perfect square number.
- e) A number less than 5.

2) The opposite figure represents a spinning disc game.

- a) Calculate the probability that the pointer stops at the colour:

(a) Red.                      (b) Green.                      (c) Yellow.



- b) Calculate the probability that the pointer does not stop at the colour red.

## Answers

## Unit 3

***Q1 / Choose the correct answer:-***

1) If the area of rhombus is  $100 \text{ cm}^2$  , what is the product of its diagonals ?

- a) 50                      b) 25                      c) 100                      **d) 200**

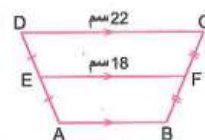
2) If the area of rhombus is  $20 \text{ cm}^2$  and the length of one of its diagonals is 5cm , what is the length of the other diagonal diagonals ?

- a) 4cm                      **b) 8cm**                      c) 10cm                      d) 15cm

3) Area of square whose side length 4cm ..... area of square whose diagonal is 5cm

- a) =                      **b) >**                      c) <

4) from the opposite figure , what is the length of AB ?



- a) 26cm                      b) 28cm                      c) 20cm                      **d) 14cm**

5) Which of the following is the image of the point  $(-1,3)$  by reflection in the X-axis ?

- a)  $(-1,-3)$**                       b)  $(1,-3)$                       c)  $(1,3)$                       d)  $(3,-1)$

6) Which of the following is the image of the point  $(a,b)$  by reflection in the X-axis ?

- a)  $(-a,-b)$                       b)  $(-a,b)$                       **c)  $(a,-b)$**                       d)  $(b,-a)$

7) Which of the following points remains the same when reflected in the Y-axis ?

- a)  $(2,-3)$                       b)  $(3,2)$                       **c)  $(0,7)$**                       d)  $(-3,0)$



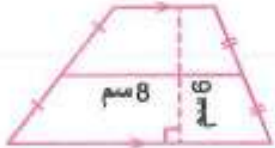
- 8) Which of the following points remains the same when reflected in the X-axis ?  
a) (2,-3)      b) (3,2)      c) (0,7)      d) (-3,0)
- 9) If the image of the point (7,3a-12) is the same when reflected in X-axis , what is the value of a?  
a) 4      b) 12      c) -4      d) 3
- 10) What is the image of the point (2,-3) by reflection in the X-axis followed by reflection in the Y-axis ?  
a) (-2,-3)      b) (2,3)      c) (-2,3)      d) (3,2)
- 11) What is the image of the point (1,7) by translation of 3 units in the positive direction of Y-axis ?  
a) (4,7)      b) (1,10)      c) (1,4)      d) (-2,7)
- 12) What is the image of the point (5,-2) by translation of 5 units in the negative direction of X-axis ?  
a) (10,-2)      b) (5,-7)      c) (5,-3)      d) (0,-2)
- 13) What is the image of the point (2,-1) by translation (x-3 , y+4)?  
a) (-3,4)      b) (-1,3)      c) (-1,5)      d) (5,3)
- 14) What is the image of the point (0,-3) by translation (-1, 2)?  
a) (-1,1)      b) (-1,-1)      c) (1,1)      d) (1,-1)
- 15) What is the image of the point (-1,0) by translation (1,0) followed by translation (2,-3)?  
a) (0,0)      b) (1,0)      c) (-1,0)      d) (2,-3)
- 16) What is the image of the point (-7,2) by rotation R(O,180°) ?  
a) (7,-2)      b) (-2,7)      c) (-2,-7)      d) (-7,-2)

- 17) Identify rotation is the rotation around the origin  $O$  by an angle of measure .....
- a)  $90^\circ$       b)  $180^\circ$       c)  $270^\circ$       d)  $360^\circ$
- 18) What is the image of the point  $(-4, 2)$  when rotated around the origin  $O$  by an angle of measure  $90^\circ$  anti-clockwise ?
- a)  $(-2, 4)$       b)  $(-2, -4)$       c)  $(4, 2)$       d)  $(-4, -2)$
- 19) Which of the following rotations makes the point  $A'$   $(X, -Y)$  the image of  $A$   $(X, -Y)$  ?
- a)  $R(O, 90^\circ)$       b)  $R(O, -90^\circ)$       c)  $R(O, 180^\circ)$       d)  $R(O, 360^\circ)$
- 20) What is the image of the point  $(-4, 5)$  under rotation  $R(O, 90^\circ)$  followed by rotation  $R(O, 180^\circ)$  ?
- a)  $(5, 4)$       b)  $(5, -4)$       c)  $(4, -5)$       d)  $(-5, -4)$

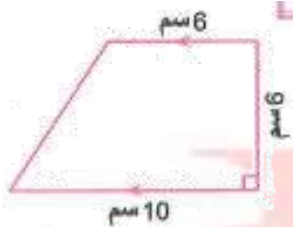


## Q2 / Answer the following :-

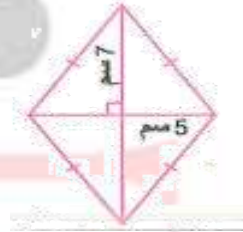
- 1) Find the area of the following figures :-



$$8 \times 6 = 48 \text{ cm}^2$$



$$\frac{1}{2} \times (6+10) \times 6 = 48 \text{ cm}^2$$



$$\frac{1}{2} \times 14 \times 10 = 70 \text{ cm}^2$$



$$\frac{1}{2} \times 10^2 = 50 \text{ cm}^2$$

- 2) Find the area of rhombus with diagonal lengths of 6 cm and 10 cm.

$$\text{Area} = \frac{1}{2} \times 6 \times 10 = 30 \text{ cm}^2$$

- 3) Find the height of a rhombus with side length of 15 cm and diagonal lengths of 18 cm and 24 cm.

$$\text{Area} = \frac{1}{2} \times 18 \times 24 = 216 \text{ cm}^2$$

$$\text{Side} = 216 \div 15 = 14.4$$

- 4) A trapezium with a height of 3 cm and a middle base length of 10 cm, find its area.

$$\text{Area} = 3 \times 10 = 30 \text{ cm}^2$$

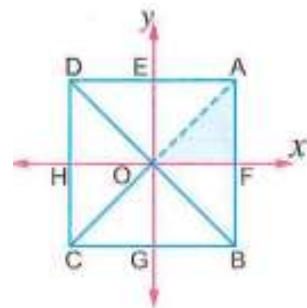
- 5) A trapezium has an area of 63 square meter and the length of its parallel bases are 10 m and 8 m. Calculate its height.

$$\text{Middle base} = \frac{1}{2} \times (8+10) = 9\text{cm}$$

$$\text{Height} = 63 \div 9 = 7\text{cm}$$

- 6) From the opposite figure :-

a) The image of  $\triangle AFO$  by reflection in the Y-axis is .....



- a)  $\triangle AOE$       b)  $\triangle DHO$       c)  $\triangle BFO$       d)  $\triangle OBG$

b) The image of  $\triangle AFO$  by reflection in the X-axis is .....

- a)  $\triangle BFO$       b)  $\triangle AOE$       c)  $\triangle DHO$       d)  $\triangle CHO$

- 7) Draw an angle whose measure is  $45^\circ$  then bisect it.

Draw by yourself.

- 8) Draw an angle whose measure is  $120^\circ$  then bisect it.

Draw by yourself.

- 9) Draw line segment AB whose length = 5cm then bisect it.

Draw by yourself.

- 10) Draw triangle ABC that  $AB=7\text{cm}$  ,  $BC=9\text{cm}$  ,  $AC=4\text{cm}$  , then determine the type of triangle according its angles.

Draw by yourself.

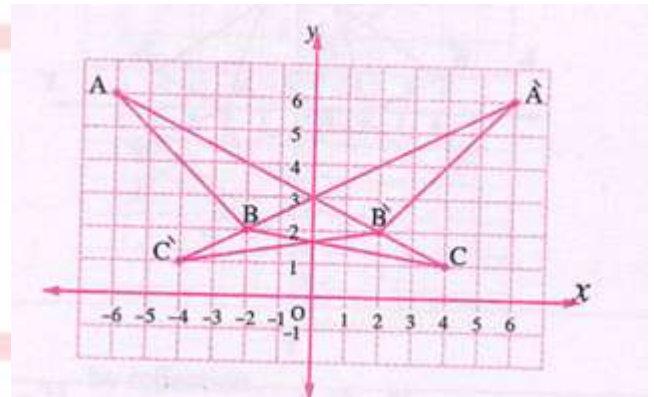
- 11) Draw triangle ABC that  $AB=5\text{cm}$  ,  $m(\angle A)=120^\circ$  ,  $m(\angle B)=30^\circ$  , then determine the type of triangle according its sides.

Draw by yourself.

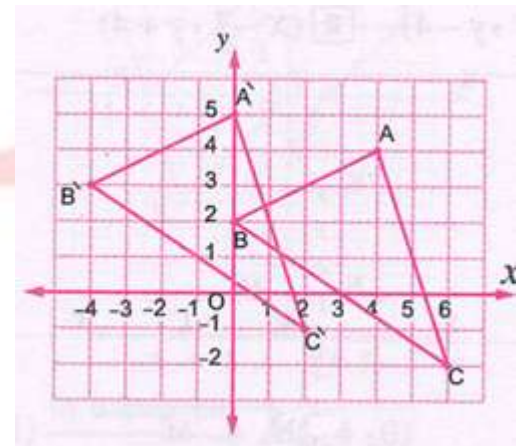
- 12) Draw triangle ABC that  $AB=7\text{cm}$  ,  $BC=5\text{cm}$  ,  $m(\angle ABC)=80^\circ$ .

Draw by yourself.

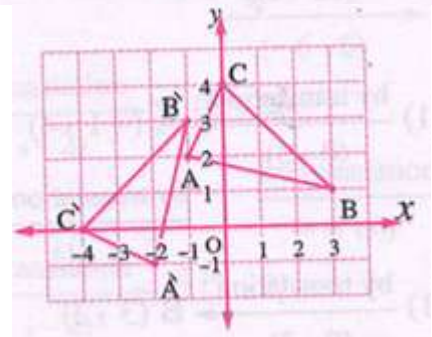
- 16) Draw the triangle ABC that  $A(-6,6)$  ,  $B(-2,2)$  ,  $C(4,1)$  , then draw its image by reflection Y-axis.



- 13) Draw the triangle ABC with vertices:  $A(4,4)$  ,  $B(0,2)$  ,  $C(6,-2)$  , then draw its image by translation  $(X-4 , Y+1)$ .



- 14) Draw the triangle ABC with vertices:  $A(-1,2)$  ,  $B(3,1)$  ,  $C(0,4)$  , then draw its image under rotation  $R(O, 90^\circ)$



**Unit 4****Q1 Choose the correct answer:-**

- 1) Drawing a card from a set of identical numbered cards without knowing the numbers written on the cards :
- a) a random experiment      b) not a random experiment      c) an impossible event      d) a certain event
- 2) Selecting a ball from a basket containing 5 identical balls all are yellow :
- a) a random experiment      b) not a random experiment      c) an impossible event      d) a simple event
- 3) In the experiment of choosing a digit of the number 5742 randomly , what is the sample space ?
- a) {2,4,5,}      b) {2,4,5,7}      c) {5742}      d) {57,74,42}
- 4) In the experiment of rolling a fair die once, which of the following events is a simple event ?
- a) event of getting a number greater than 6      b) event of getting an even prime number
- c) event of getting a number less than or equal to 2      d) event of getting an odd number
- 5) When drawing a card from 10 identical cards numbered from 1 to 10 , which of the following is the event of drawing a number divisible by 2 ?
- a) {2,4,6,8}      b) {2,6}      c) {2,4,6,8,10}      d) {2,4,6}

- 6) In the experiment of rolling a fair die once, and observing the number shown on the upper face, which of the following events is a certain event ?
- a) {2, 4, 6}      b) {1}      c) {1, 3, 5}      d) {1, 2, 3, 4, 5, 6}
- 7) If you are thinking of purchasing one pen from a set of identical pens containing 5 red pens, 2 blue pens, and 3 black pens, and you select this pen randomly what is the probability that the pen is blue?
- a)  $\frac{1}{4}$       b)  $\frac{1}{5}$       c)  $\frac{2}{15}$       d)  $\frac{1}{15}$
- 8) In an experiment of rolling a fair die once, what is the probability of getting a number divisible by 2 ?
- a) zero      b)  $33\frac{1}{3}\%$       c) 50 %      d) 70 %
- 9) If A is an event from a random experiment with equal chances of occurrence, and the probability of event A is 40%, the number of elements of the sample space is 15, what is the number of Elements of event A ?
- a) 2      b) 4      c) 6      d) 10
- 10) A ball is drawn randomly from a box containing 35 identical balls, of which 7 are white and the remainder are red and black, What is the probability that the drawn ball is not white ?

- a)  $\frac{1}{6}$       b)  $\frac{1}{5}$       c)  $\frac{4}{5}$       d)  $\frac{34}{35}$

11) A card carrying a letter from the word "NORHAN" is drawn randomly. What is the probability that this letter is (N)?

- a)  $\frac{1}{6}$       b)  $\frac{1}{3}$       c)  $\frac{2}{3}$       d)  $\frac{2}{5}$

12) In an experiment of rolling a fair die once, what is the probability of appearing a number less than 5?

- a)  $\frac{1}{6}$       b)  $\frac{1}{3}$       c)  $\frac{2}{3}$       d)  $\frac{1}{2}$

13) Which of the following could be a probability of an event occurring?

- a) 1.2      b) -0.4      c)  $\frac{2}{3}$       d) 213%

14) In an experiment of rolling a fair die and observing the upper face, the probability of rolling a number that is not equal to 2 is

- a)  $\frac{1}{6}$       b)  $\frac{1}{3}$       c)  $\frac{2}{3}$       d)  $\frac{5}{6}$

15) If a fair coin is tossed 400 times, the closest number of times that heads is expected to appear from the following is

- a) 300      b) 90      c) 188      d) 270



## Q2 Complete the following:-

- 1) In the experiment of tossing a fair coin twice in consecutive where the head is H and the tail is T, the sample space for this Experiment is {HH, HT, TH, TT}
- 2) In the experiment of rolling a fair die twice in consecutive and observing the number showing on the upper face, the number of Elements in the sample space is 36
- 3) In the experiment of forming a 2-digit number from the set of numbers {2, 3, 4} the number of elements in the sample space is 9
- 4) If the probability of an event occurring equals the probability of the same event not occurring, then the probability of that event  $= \frac{1}{2} = 50\%$
- 5) The probability of an impossible event = 0
- 6) The probability of a certain event = 1

### Q3 Answer the following:-

- 1) A card was drawn randomly from a set of identical cards numbered from 5 to 14 , find the probability that the drawn card carries:

$$S = \{5, 6, 7, 8, 9, 10, 11, 12, 13, 14\} \quad n(S) = 10$$

f) An odd number.  $\frac{5}{10} = \frac{1}{2}$

g) An even number greater than 9.  $\frac{3}{10}$

h) A prime number.  $\frac{4}{10} = \frac{2}{5}$

i) A perfect square number.  $\frac{1}{10}$

j) A number less than 5. zero

- 2) The opposite figure represents a spinning disc game.



- c) Calculate the probability that the pointer stops at the colour:

(a) Red.  $\frac{1}{8}$

(b) Green.  $\frac{3}{8}$

(c) Yellow.  $\frac{4}{8} = \frac{1}{2}$

- d) Calculate the probability that the pointer does not stop at the colour red.  $\frac{7}{8}$

حمل الآن

مجاناً وحصرياً

# المراجعة رقم (6)

## اختبار شهر ابريل



### Model (1)

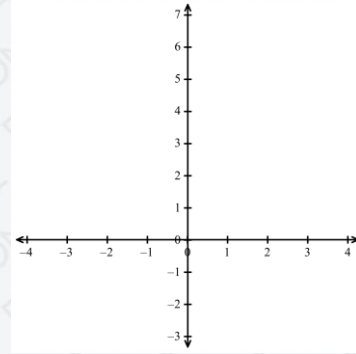
#### Question 1 : Choose the correct answer :

- 1 What is the image of the point  $(a, b)$  by reflection in the y-axis ?  
 (a)  $(a, -b)$  (b)  $(-a, b)$  (c)  $(b, -a)$  (d)  $(-b, a)$
  - 2 The product of the lengths of two diagonals of a square is 16 square meters  
 What is its area in square meters ?  
 (a) 4 (b) 8 (c) 32 (d) 128
  - 3 Which of the following is the image of the point  $(5, 0)$  by rotation  $R(0, 90^\circ)$   
 (a)  $(5, 0)$  (b)  $(-5, 0)$  (c)  $(0, 5)$  (d)  $(0, -5)$
  - 4 When bisecting the line segment  $\overline{AB}$  by a compass ,  
 You must have .....  
 (a)  $AC < \frac{1}{2}AB$  (b)  $AC < AD$   
 (c)  $AC > \frac{1}{2}AB$  (d)  $AC < AE$
- 
- 5 The identity rotation around the origin point is has an angle of measure  
 (a)  $90^\circ$  (b)  $180^\circ$  (c)  $270^\circ$  (d)  $360^\circ$
  - 6 What is the geometric transformation equivalent to a reflection in the x-axis followed  
 by a reflection in the y-axis ?  
 (a)  $R(0, 90^\circ)$  (b)  $R(0, 180^\circ)$  (c)  $R(0, 270^\circ)$  (d)  $R(0, 360^\circ)$
  - 7 What is the image of the point  $(2, 1)$  by translation  
 $(x, y) \rightarrow (x + 1, y - 2)$   
 (a)  $(3, 1)$  (b)  $(3, -3)$  (c)  $(3, -1)$  (d)  $(-1, 3)$
  - 8 The lengths of the middle base in a trapezium is equal to 15 feet and its height is 8 feet  
 What is its area ?  
 (a) 60 square feet (b) 120 square feet  
 (c) 240 square feet (d) 23 square feet
  - 9 Which translation makes the point  $A'(-2, 1)$  is the image of the point  $A(4, -5)$   
 (a)  $(-6, 6)$  (b)  $(-6, -4)$  (c)  $(2, -4)$  (d)  $(-b, a)$

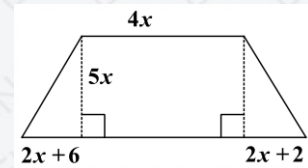


## Question 2 : Answer the following questions :

- ① Draw the triangle ABC with vertices  $A(-2, 3)$ ,  $B(1, 4)$ , and  $C(0, 6)$  then find its image by translation  $(x, y) \rightarrow (x + 2, y - 1)$



- ② Find the area of the trapezium whose lengths of the two parallel bases are  $7\text{cm}$  and  $15\text{cm}$  and its height is  $8\text{cm}$
- ③ Find the quotient of :  $(x^2 - 20 - x)$  divided by  $(x - 5)$
- ④ Draw a line segment  $\overline{AB}$  of lengths  $5\text{cm}$ , then bisect it using a ruler and compass
- ⑤ Simplify the expression to its simplest form :  $(2n - 1)^2 - (2n + 1)(2n - 1)$  then find the numerical value of the result when  $n = -3$
- ⑥ Find in terms of  $x$  the area of the opposite trapezium



- ⑦ In an experiment of tossing a fair coin twice successively and observing the sequence of appearances of heads and tails, write the sample space (S) and then express each of the following :
- 1) Event (A) is the event of (appearance of a head on the first toss ?
  - 2) Event (B) is the event of (appearance of the same outcome on both tosses) ?
  - 3) Event (C) is the event of (appearance of a head on only one of the two tosses) ?

### Model (2)

#### Question 1 : Choose the correct answer :

- 1 What is the inequality that expresses that the temperature  $X$  is less than  $30^{\circ}$  ?  
 (a)  $x < 30^{\circ}$  (b)  $x > 30^{\circ}$  (c)  $x \leq 30^{\circ}$  (d)  $x \geq 30^{\circ}$
- 2 Which of the following point remains the same when reflected in the  $y$ -axis ?  
 (a)  $(-7,0)$  (b)  $(0,3)$  (c)  $(-2,5)$  (d)  $(4,-10)$
- 3 What is the translation that makes the point  $A'(-4,6)$  is the image of the point  $A(2,-1)$   
 (a)  $(-6,7)$  (b)  $(-2,5)$  (c)  $(6,-7)$  (d)  $(-5,8)$
- 4 What is the image of the point  $(3,-9)$  by rotation  $R(0, 180^{\circ})$  followed by rotation  $R(0,-90^{\circ})$   
 (a)  $(-3,-9)$  (b)  $(-9,-3)$  (c)  $(-3,9)$  (d)  $(9,3)$
- 5 A trapezium with a height of  $3\text{cm}$  and a middle base length of  $10\text{cm}$  , its area = ..... square centimeters .  
 (a) 7.5 (b) 15 (c) 30 (d) 60
- 6 The rotation that makes the image of a shape is the shape it self is a rotation around the origin by an angle of measure .....  
 (a)  $90^{\circ}$  (b)  $-90^{\circ}$  (c)  $180^{\circ}$  (d)  $360^{\circ}$
- 7 If a rhombus with diagonal lengths of 6 inches and 10 inches , then what is its area ?  
 (a) 30 square inches (b) 120 square inches  
 (c) 60 square inches (d) 16 square inches
- 8 In an experiment of tossing a fair coin three consecutive times , what is the number of elements in the sample space ?  
 (a) 2 (b) 4 (c) 6 (d) 8
- 9 The image of the point  $(-6,6)$  by translation  $(x,y) \rightarrow (x-1, y+2)$   
 (a)  $(-4,5)$  (b)  $(-5,4)$  (c)  $(-5,8)$  (d)  $(-7,8)$

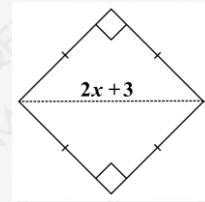
#### Question 2 : Answer the following questions :

- 1 Draw the equilateral triangle  $ABC$  with each side of length  $6\text{ cm}$  .



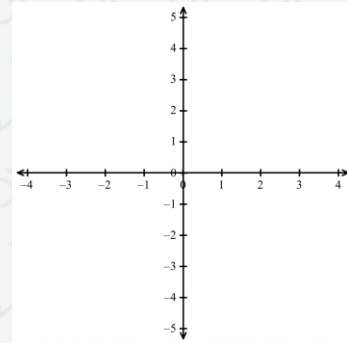
2

Find the area of the opposite square in terms of  $x$ , then find the numerical value of the area when  $x = 3$



3

Draw the square ABCD with vertices  $A(-1,2)$ ,  $B(1,0)$ ,  $C(3,2)$  and  $D(1,4)$  then draw its image by reflection in the x-axis



4

Find the quotient of :

$$(2 + 2y^2 - 5y) \text{ divided by } (y - 2)$$

5

A bag contains 20 identical cards numbered from 1 to 20 . one card is drawn randomly , and the number on the drawn card is recorded write each of the following events

- 1) Event (A) is the event of drawing a number divisible by 6
- 2) Event (B) is the event of drawing an odd number that is a multiple of 5
- 3) Event (C) is the event of drawing a perfect square number
- 4) Event (D) is the event of drawing a number satisfies the inequality  $x \geq 12$

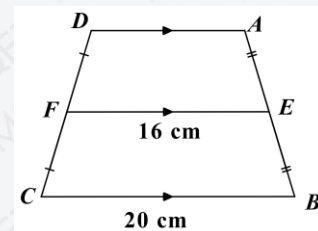
6

If  $A(-2,1)$ ,  $B(5, -3)$  write the rule of the translation that makes :

- (1) B is the image of A
- (2) A is the image of B

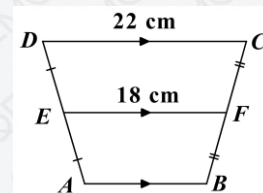
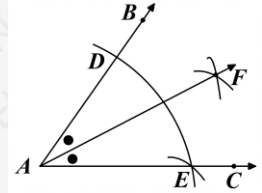
7

In the given figure :  
ABCD is a trapezium , find the lengths of  $\overline{AD}$



**Question 1 : Choose the correct answer :**

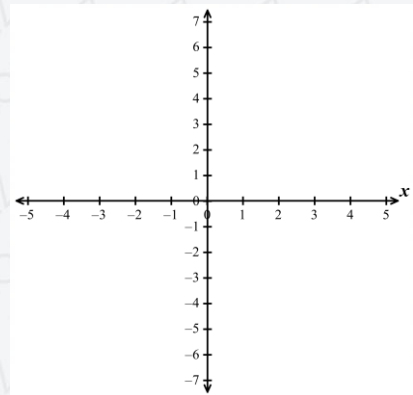
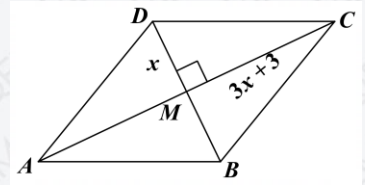
- 1 In the opposite figure :  
When bisecting  $\angle BAC$  with a compass makes , you find that :  $m(\angle BAF)$ 
  - a  $m(\angle BFA)$
  - b  $m(\angle EAF)$
  - c  $m(\angle EFA)$
  - d  $m(\angle BAC)$
- 2 What is the point whose image by rotation  $R(0, 180^\circ)$  is  $(-3, 1)$  ?
  - a  $(3, 1)$
  - b  $(1, 3)$
  - c  $(-1, 3)$
  - d  $(3, -1)$
- 3 In an experiment of selecting one of the digits randomly from the number 7952 , what is the sample space ?
  - a  $\{7952\}$
  - b  $\{79, 52\}$
  - c  $\{7, 9, 5, 2\}$
  - d  $\{79, 52, 95\}$
- 4 What is the image of the point  $(-1, 4)$  translation 1 unit upwards followed by a translation 4 units downwards ?
  - a  $(0, 0)$
  - b  $(-2, 8)$
  - c  $(2, -8)$
  - d  $(-1, 1)$
- 5 A cube with a volume of 1,728 cubic units , what is the length of its edge ?
  - a 8
  - b 11
  - c 12
  - d 14
- 6 If  $A'(3, 4)$  is the image of the point A by translation  $(x - 1, y + 2)$  , then the point A is ..
  - a  $(2, 6)$
  - b  $(4, 2)$
  - c  $(6, -7)$
  - d  $(4, 5)$
- 7 If the area of a square is 72 square meters , then what is the length of its diagonal ?
  - a 12 meters
  - b 14 meters
  - c 15 meters
  - d 16 meters
- 8 Which of the following is the image of the point  $(-3, 7)$  by the reflection in the x-axis?
  - a  $(3, 7)$
  - b  $(-3, -7)$
  - c  $(0, 7)$
  - d  $(3, -7)$
- 9 In the opposite figure : What is the length of  $\overline{AB}$ 
  - a 14 cm
  - b 20 cm
  - c 26 cm
  - d 28 cm



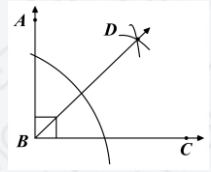


## Question 2 : Answer the following questions :

- ① In the opposite figure :  
ABCD is a rhombus its diagonals intersecting at M  
 $MD = x$  ,  $MC = 3x + 3$   
Find the area of the rhombus in terms of  $x$  ,  
then calculate the numerical value of the area when  $x = 7$
- ② Draw  $\triangle ABC$  where  $AB = 6 \text{ cm}$  ,  $m(\angle A) = 90^\circ$  and  $m(\angle B) = 45^\circ$  , then bisect  $\angle A$  with the bisector  $\overline{AD}$  which intersects  $\overline{BC}$  at point D. Determine the type of the triangle ABD according to the lengths of its sides .
- ③ A card was drawn randomly from identical cards numbered form 4 to 11  
Write the sample space then find each of the following two events .  
1) Event (A) is the event of drawing a number divisible by 3  
2) Event (B) is the event of drawing a number greater then 8
- ④ Find the area of a trapezium with two parallel bases  $7 \text{ cm}$  ,  $9 \text{ cm}$  and height of  $5 \text{ cm}$
- ⑤ A trapezium has an area of 105 square centimeters and a height of 7 centimeters . if the ratio between the lengths of its two bases is 2: 3  
What is the length of each base ?
- ⑥ Draw a line segment of length 4.5 , then bisect it using a ruler and compass .
- ⑦ Draw on the grid , the rectangle ABCD  $A(1,1)$ ,  $B(3,1)$ ,  $C(3,6)$  and  $D(1,6)$  , then find its image by rotation  $R(0,90^\circ)$



**Question 1 : Choose the correct answer :**

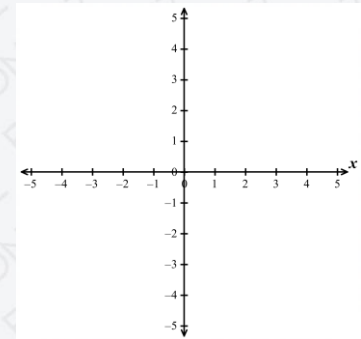


- 1 In the given figure:  
When bisecting  $\angle ABC$  with a compass ( $\angle ABD$ )
  - (a)  $35^\circ$
  - (b)  $45^\circ$
  - (c)  $90^\circ$
  - (d)  $180^\circ$
- 2 What is the image of the point  $(-2, 4)$  by rotation  $R(0, 90^\circ)$  followed by rotation  $R(0, 180^\circ)$ ?
  - (a)  $(-4, -2)$
  - (b)  $(4, -2)$
  - (c)  $(-4, 2)$
  - (d)  $(4, 2)$
- 3 In the experiment of tossing a fair coin 3 consecutive times and observing the upper face, what is the number of sample space elements?
  - (a) 2
  - (b) 4
  - (c) 8
  - (d) 16
- 4 What is the image of the point  $(4, -3)$  by reflection in the x-axis followed by reflection in the y-axis?
  - (a)  $(-4, 3)$
  - (b)  $(4, 3)$
  - (c)  $(-4, -3)$
  - (d)  $(-3, -4)$
- 5 A trapezium with an area of 162 square yards and the lengths of its two parallel bases are 17 yards and 19 yards, what is its height?
  - (a) 4.5 yards
  - (b) 8 yards
  - (c) 9 yards
  - (d) 18 yards
- 6 What is the image of point  $(3, 4)$  by translation  $(x, y) \rightarrow (x - y, y - 2)$ ?
  - (a)  $(2, 1)$
  - (b)  $(1, -2)$
  - (c)  $(-1, 2)$
  - (d)  $(-1, -2)$
- 7 A trapezium with an area of 320 square feet and a height of 16 feet, what is the length of its middle base?
  - (a) 16
  - (b) 20
  - (c) 40
  - (d) 60
- 8 What is the image of the point  $(7, -4)$  by translation of 5 units in the negative direction of the x-axis?
  - (a)  $(2, -9)$
  - (b)  $(7, -9)$
  - (c)  $(7, 1)$
  - (d)  $(2, -4)$
- 9 The image of the point ..... is the same point by reflection in the x-axis
  - (a)  $(-3, 0)$
  - (b)  $(0, 2)$
  - (c)  $(-4, 10)$
  - (d)  $(-2, -5)$

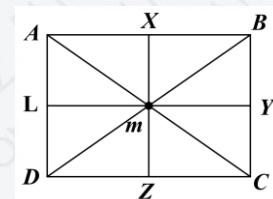


## Question 2 : Answer the following questions :

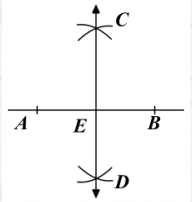
- 1 Write the sample space for each of the following experiments indicating the number of its elements:
  - 1) Experiment of forming a two – digit number from the set of digits  $\{2, 3, 4\}$
  - 2) Experiment of choosing a digit from the digits of the number **68753** randomly
- 2 If the area of a rhombus is 120 square centimeters and the length of one of its diagonals is 10 *cm* , then find the length of the other diagonal
- 3 Draw  $\Delta xyz$  where  $xy = 5\text{ cm}$  ,  $yz = 4\text{ cm}$  , and  $xz = 3\text{ cm}$  , then determine the type of triangle according to the measure of its angles
- 4 Draw  $\Delta ABC$  in the coordinate plane where  $A (-4, 1)$  ,  $B (-1, 1)$  ,  $C (-2, 3)$  , then draw its image by rotation  $R (0, 90^\circ)$  followed by rotation  $R (0, 180^\circ)$



- 5 A square with a diagonal length of  $10x\text{ cm}$  , calculate its area in terms of  $x$  , then find the numerical value of the area at  $x = 2$
- 6 From the set of digits  $\{1, 2, 3\}$  form a number of two different digits. Write the sample space then find each of the following two events:
  - 1) event  $A$  is the event that the sum of the two digits is less than 4
  - 2) Event  $B$  is the event that the number is divisible by 2
- 7 In the given figure  $ABCD$  is a square  
find the image of the triangle  $MBX$   
by rotation  $R (M, 90^\circ)$



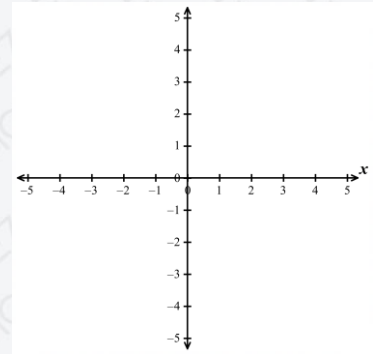
**Question 1 : Choose the correct answer :**

- 1 What is the rotation that makes the image of point  $A(2, 5)$  be  $A'(-5, 2)$   
 (a)  $R(0, 180^\circ)$  (b)  $R(0, 90^\circ)$  (c)  $R(0, -90^\circ)$  (d)  $R(0, 360^\circ)$
  - 2 The image of the point  $(2, 5)$  by reflection in the x-axis is .....  
 (a)  $(5, 2)$  (b)  $(2, -5)$  (c)  $(-2, -5)$  (d)  $(-2, 5)$
  - 3 The area of square with a diagonal length of  $12\text{ cm}$  ..... the area of a rhombus with diagonal lengths  $6\text{ cm}$ ,  $12\text{ cm}$   
 (a)  $\leq$  (b)  $=$  (c)  $<$  (d)  $>$
  - 4 The experiment of rolling a fair die 2 consecutive times, the number of times of appearing two numbers whose sum is 12 is .....  
 (a) 1 (b) 6 (c) 12 (d) 36
  - 5 The image of the point  $(3, -2)$  by translation  $(x, y) \rightarrow (x - 4, y + 3)$  is .....  
 (a)  $(1, 1)$  (b)  $(-1, -1)$   
 (c)  $(-1, 1)$  (d)  $(1, -1)$
  - 6 The image of the point  $(3, 2)$  by a translation of 3 units downwards followed by a translation of 4 units to the right is .....  
 (a)  $(0, 6)$  (b)  $(6, 0)$  (c)  $(7, -1)$  (d)  $(-1, -1)$
  - 7 When bisecting the line segment  $\overline{AB}$  by a compass, you must have .....  
 (a)  $Ac < \frac{1}{2} AB$  (b)  $Ac < AD$   
 (c)  $Ac > \frac{1}{2} AB$  (d)  $Ac < AE$
- 
- 8 What is the image of the point  $(2, -5)$  by rotation around the origin  $O$  with an angle of measure  $90^\circ$  anticlockwise?  
 (a)  $(-5, -2)$  (b)  $(5, 2)$  (c)  $(-2, 5)$  (d)  $(2, -5)$
  - 9 Drawing a coloured ball from box containing identical balls of unknown colours:  
 (a) Random experiment (b) Not a random experiment  
 (c) Impossible event (d) Certain event



**Question 2 : Answer the following questions :**

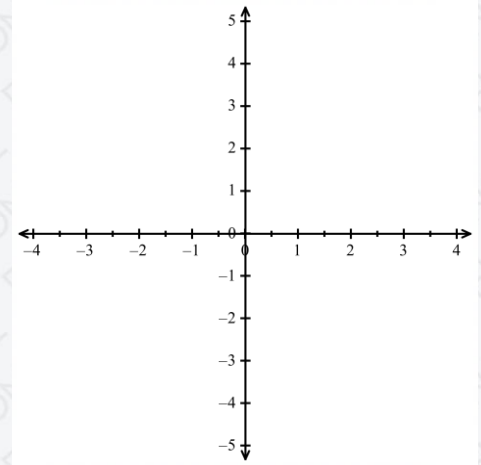
- ① Draw an angle of measure  $45^\circ$  and then bisect it using a ruler and compass
- ② Draw  $\overline{AB}$  on a grid where  $A(2, 1)$ ,  $B(3, 5)$  and then draw its image under reflection in the x-axis followed by reflection in the y-axis



- ③ Draw the triangle  $ABC$  where  $m(\angle ABC) = 40^\circ$ ,  $m(\angle ACB) = 70^\circ$  and  $Bc = 5\text{ cm}$ , then determine by measuring the type of triangle according to the lengths of its sides
- ④ Draw an equilateral triangle  $ABC$  with side length of  $4\text{ cm}$
- ⑤ A bag contains 10 identical cards numbered from 1 to 10, one card is drawn randomly by write the following events:
  - a) the event  $A$  of drawing number less than 4
  - b) the event  $B$  of drawing odd number
  - c) the event  $c$  of drawing number divisible by 5

6

Draw the image of each of the two points  $A (2, 3)$  ,  $B (-1, 0)$  by rotation  $R (0, 90^\circ)$  followed by rotation  $R (0, 180^\circ)$



7

Complete :

The image of the point  $(4, 5)$  under the translation  $(-2, 2)$  is .....



### Model (1)

#### Question 1 : Choose the correct answer :

- 1 What is the image of the point  $(a, b)$  by reflection in the y-axis ?  
 (a)  $(a, -b)$  (b)  $(-a, b)$  (c)  $(b, -a)$  (d)  $(-b, a)$
  - 2 The product of the lengths of two diagonals of a square is 16 square meters  
 What is its area in square meters ?  
 (a) 4 (b) 8 (c) 32 (d) 128
  - 3 Which of the following is the image of the point  $(5, 0)$  by rotation  $R(0, 90^\circ)$   
 (a)  $(5, 0)$  (b)  $(-5, 0)$  (c)  $(0, 5)$  (d)  $(0, -5)$
  - 4 When bisecting the line segment  $\overline{AB}$  by a compass ,  
 You must have .....  
 (a)  $AC < \frac{1}{2}AB$  (b)  $AC < AD$   
 (c)  $AC > \frac{1}{2}AB$  (d)  $AC < AE$
- 
- 5 The identity rotation around the origin point is has an angle of measure  
 (a)  $90^\circ$  (b)  $180^\circ$  (c)  $270^\circ$  (d)  $360^\circ$
  - 6 What is the geometric transformation equivalent to a reflection in the x-axis followed  
 by a reflection in the y-axis ?  
 (a)  $R(0, 90^\circ)$  (b)  $R(0, 180^\circ)$  (c)  $R(0, 270^\circ)$  (d)  $R(0, 360^\circ)$
  - 7 What is the image of the point  $(2, 1)$  by translation  
 $(x, y) \rightarrow (x + 1, y - 2)$   
 (a)  $(3, 1)$  (b)  $(3, -3)$  (c)  $(3, -1)$  (d)  $(-1, 3)$
  - 8 The lengths of the middle base in a trapezium is equal to 15 feet and its height is 8 feet  
 What is its area ?  
 (a) 60 square feet (b) 120 square feet  
 (c) 240 square feet (d) 23 square feet
  - 9 Which translation makes the point  $A'(-2, 1)$  is the image of the point  $A(4, -5)$   
 (a)  $(-6, 6)$  (b)  $(-6, -4)$  (c)  $(2, -4)$  (d)  $(-b, a)$

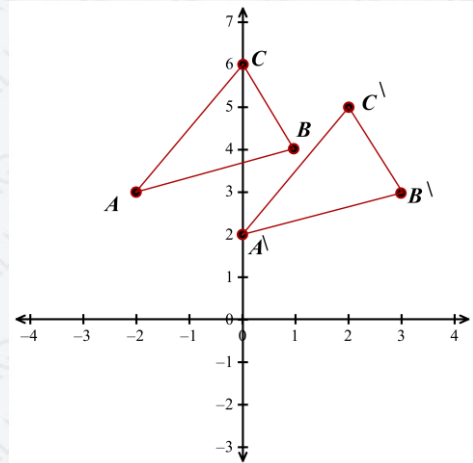
## Question 2 : Answer the following questions :

- ① Draw the triangle ABC with vertices  $A(-2, 3)$ ,  $B(1, 4)$ , and  $C(0, 6)$  then find its image by translation  $(x, y) \rightarrow (x + 2, y - 1)$

$$A(-2, 3) \xrightarrow{(2, -1)} A'(0, 2)$$

$$B(1, 4) \xrightarrow{(2, -1)} B'(3, 3)$$

$$C(0, 6) \xrightarrow{(2, -1)} C'(2, 5)$$



- ② Find the area of the trapezium whose lengths of the two parallel bases are 7cm and 15cm and its height is 8cm

the area of trapezium

$$A = \frac{1}{2}(b_1 + b_2)h$$

$$\frac{1}{2}(7 + 15) \times 8 = 88 \text{ cm}^2$$

- ③ Find the quotient of :

$(x^2 - 20 - x)$  divided by  $(x - 5)$

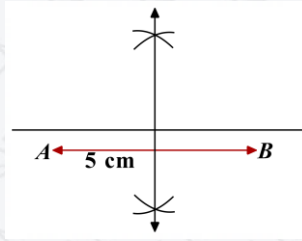
$$\begin{array}{r} x + 4 \\ x - 5 \overline{) x^2 - x - 20} \\ \underline{x^2 - 5x} \phantom{- 20} \\ 4x - 20 \\ \underline{4x - 20} \\ 0 + 0 \end{array}$$

the quotient =  $x + 4$



4

Draw a line segment  $\overline{AB}$  of lengths  $5\text{cm}$  , then bisect it using a ruler and compass



5

Simplify the expression to its simplest form :  $(2n - 1)^2 - (2n + 1)(2n - 1)$

then find the numerical value of the result when  $n = -3$

$$\begin{aligned}(2n - 1)^2 - (2n + 1)(2n - 1) &= 4n^2 - 4n + 1 - (4n^2 - 1) \\ &= 4n^2 - 4n + 1 - 4n^2 + 1 = -4n + 2\end{aligned}$$

$$\text{the numerical value of the expression} = -4 \times (-3) + 2 = 12 + 2 = 14$$

6

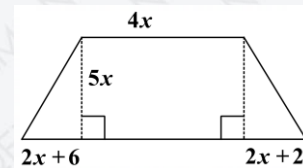
Find in terms of  $x$  the area of the opposite trapezium

$$\text{area of trapuzium} = \frac{1}{2}(b_1 + b_2)h$$

$$= \frac{1}{2}(2x + 6 + 4x + 2x + 2 + 4x) \times 5x$$

$$= \frac{1}{2}(12x + 8) \times 5x$$

$$= (6x + 4) \times 5x = 30x^2 + 20x$$



7

In an experiment of tossing a fair coin twice successively and observing the sequence of appearances of heads and tails , write the sample space (S) and then express each of the following :

1) Event (A) is the event of (appearance of a head on the first toss ?

2) Event (B) is the event of (appearance of the same outcome on both tosses ) ?

3) Event (C ) is the event of (appearance of a head on only one of the two tosses ) ?

$$S = \{(H, H), (H, T), (T, H), (T, T)\}$$

$$1)\{(H, H), (H, T)\}$$

$$2)\{(H, H), (T, T)\}$$

$$3)\{(H, T), (T, H)\}$$

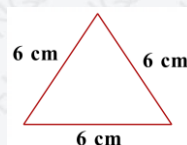
### Model (2)

#### Question 1 : Choose the correct answer :

- 1 What is the inequality that expresses that the temperature  $X$  is less than  $30^{\circ}$  ?  
 (a)  $x < 30^{\circ}$  (b)  $x > 30^{\circ}$  (c)  $x \leq 30^{\circ}$  (d)  $x \geq 30^{\circ}$
- 2 Which of the following point remains the same when reflected in the  $y$ -axis ?  
 (a)  $(-7,0)$  (b)  $(0,3)$  (c)  $(-2,5)$  (d)  $(4,-10)$
- 3 What is the translation that makes the point  $A(-4,6)$  is the image of the point  $A(2,-1)$   
 (a)  $(-6,7)$  (b)  $(-2,5)$  (c)  $(6,-7)$  (d)  $(-5,8)$
- 4 What is the image of the point  $(3,-9)$  by rotation  $R(0, 180^{\circ})$  followed by rotation  $R(0, -90^{\circ})$   
 (a)  $(-3,-9)$  (b)  $(-9,-3)$  (c)  $(-3,9)$  (d)  $(9,3)$
- 5 A trapezium with a height of  $3\text{cm}$  and a middle base length of  $10\text{cm}$  , its area = ..... square centimeters .  
 (a) 7.5 (b) 15 (c) 30 (d) 60
- 6 The rotation that makes the image of a shape is the shape it self is a rotation around the origin by an angle of measure .....  
 (a)  $90^{\circ}$  (b)  $-90^{\circ}$  (c)  $180^{\circ}$  (d)  $360^{\circ}$
- 7 If a rhombus with diagonal lengths of 6 inches and 10 inches , then what is its area ?  
 (a) 30 square inches (b) 120 square inches  
 (c) 60 square inches (d) 16 square inches
- 8 In an experiment of tossing a fair coin three consecutive times , what is the number of elements in the sample space ?  
 (a) 2 (b) 4 (c) 6 (d) 8
- 9 The image of the point  $(-6,6)$  by translation  $(x,y) \rightarrow (x-1, y+2)$   
 (a)  $(-4,5)$  (b)  $(-5,4)$  (c)  $(-5,8)$  (d)  $(-7,8)$

#### Question 2 : Answer the following questions :

- 1 Draw the equilateral triangle ABC with each side of length  $6\text{ cm}$  .





2

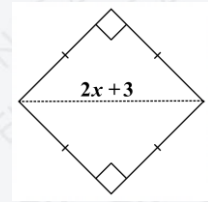
Find the area of the opposite square in terms of  $x$ , then find the numerical value of the area when  $x = 3$

The area of the square in terms of  $x$  :

$$\begin{aligned} A &= \frac{1}{2}d^2 = \frac{1}{2}(2x + 3)^2 \\ &= \frac{1}{2}(4x^2 + 12x + 9) \\ &= x^2 + 6x + 4.5 \end{aligned}$$

The numerical value of the area when  $x = 3$

$$2 \times (3)^2 + 6 \times 3 + 4.5 = 18 + 18 + 4.5 = 40.5$$



3

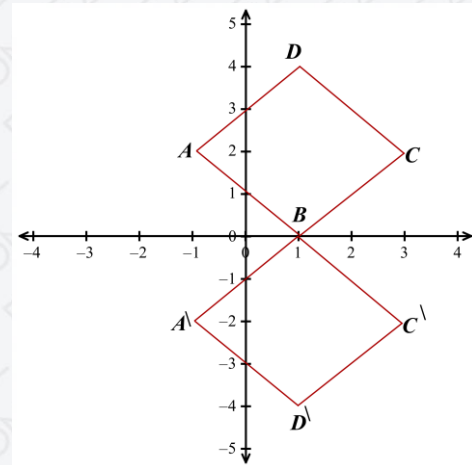
Draw the square ABCD with vertices  $A(-1,2)$ ,  $B(1,0)$ ,  $C(3,2)$  and  $D(1,4)$  then draw its image by reflection in the  $x$ -axis

$$A(-1,2) \xrightarrow[\text{in the } x\text{-axis}]{\text{by reflection}} A'(-1,-2)$$

$$B(1,0) \xrightarrow[\text{in the } x\text{-axis}]{\text{by reflection}} B'(1,0)$$

$$C(3,2) \xrightarrow[\text{in the } x\text{-axis}]{\text{by reflection}} C'(3,-2)$$

$$D(1,4) \xrightarrow[\text{in the } x\text{-axis}]{\text{by reflection}} D'(1,-4)$$



4

Find the quotient of :

$(2 + 2y^2 - 5y)$  divided by  $(y - 2)$

$$\begin{array}{r} 2y - 1 \\ y - 2 \overline{) 2y^2 - 5y + 2} \\ \underline{2y^2 - 4y} \phantom{+ 2} \\ -y + 2 \\ \underline{-y + 2} \\ 0 \phantom{+ 2} \end{array}$$

the quotient =  $2y - 1$

- 5 A bag contains 20 identical cards numbered from 1 to 20 . one card is drawn randomly , and the number on the drawn card is recorded write each of the following events

- 1) Event (A) is the event of drawing a number divisible by 6
- 2) Event (B) is the event of drawing an odd number that is a multiple of 5
- 3) Event (C) is the event of drawing a perfect square number
- 4) Event (D) is the event of drawing a number satisfies the inequality  $x \geq 12$

$$A = \{6, 12, 18\}$$

$$B = \{5, 15\}$$

$$C = \{1, 4, 9, 16\}$$

$$D = \{12, 13, 14, 15, 16, 17, 18, 19, 20\}$$

- 6 If  $A(-2, 1), B(5, -3)$  write the rule of the translation that makes :

- (1) B is the image of A
- (2) A is the image of B

$$(1) (x + 7, y - 4)$$

$$(2) (x - 7, y + 4)$$

- 7 In the given figure :  
ABCD is a trapezium , find the lengths of  $\overline{AD}$

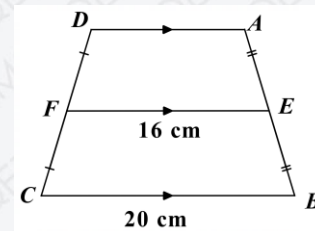
$$\therefore \frac{AD + BC}{2} = EF$$

$$\therefore \frac{AD + 20}{2} = 16$$

$$\therefore AD + 20 = 32$$

$$\therefore AD = 32 - 20 = 12cm$$

$$\therefore \text{length of } \overline{AD} = 12cm$$



### Model (3)

#### Question 1 : Choose the correct answer :

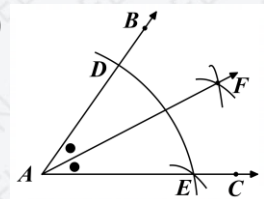
- 1 In the opposite figure :  
When bisecting  $\angle BAC$  with a compass makes , you find that :  $m(\angle BAF)$

(a)  $m(\angle BFA)$

(b)  $m(\angle EAF)$

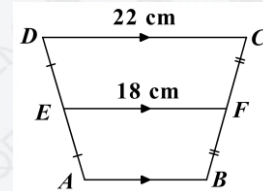
(c)  $m(\angle EFA)$

(d)  $m(\angle BAC)$



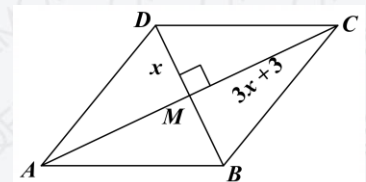


- 2 What is the point whose image by rotation  $R(0, 180^\circ)$  is  $(-3, 1)$  ?  
 (a)  $(3, 1)$  (b)  $(1, 3)$  (c)  $(-1, 3)$  (d)  $(3, -1)$
- 3 In an experiment of selecting one of the digits randomly from the number 7952 , what is the sample space ?  
 (a)  $\{7952\}$  (b)  $\{79, 52\}$  (c)  $\{7, 9, 5, 2\}$  (d)  $\{79, 52, 95\}$
- 4 What is the image of the point  $(-1, 4)$  translation 1 unit upwards followed by a translation 4 units downwards ?  
 (a)  $(0, 0)$  (b)  $(-2, 8)$  (c)  $(2, -8)$  (d)  $(-1, 1)$
- 5 A cube with a volume of 1,728 cubic units , what is the length of its edge ?  
 (a) 8 (b) 11 (c) 12 (d) 14
- 6 If  $A'(3, 4)$  is the image of the point A by translation  $(x - 1, y + 2)$  , then the point A is ..  
 (a)  $(2, 6)$  (b)  $(4, 2)$  (c)  $(6, -7)$  (d)  $(4, 5)$
- 7 If the area of a square is 72 square meters , then what is the length of its diagonal ?  
 (a) 12 meters (b) 14 meters (c) 15 meters (d) 16 meters
- 8 Which of the following is the image of the point  $(-3, 7)$  by the reflection in the x-axis?  
 (a)  $(3, 7)$  (b)  $(-3, -7)$  (c)  $(0, 7)$  (d)  $(3, -7)$
- 9 In the opposite figure : What is the length of  $\overline{AB}$   
 (a) 14 cm (b) 20 cm  
 (c) 26 cm (d) 28 cm



**Question 2 : Answer the following questions :**

- 1 In the opposite figure :  
 ABCD is a rhombus its diagonals intersecting at M  
 $MD = x$  ,  $MC = 3x + 3$   
 Find the area of the rhombus in terms of x ,  
 then calculate the numerical value of the area when  $x = 7$



$$\begin{aligned} &\because ABCD \text{ is a rhombus} \\ &\because DM = BM, AM = CM \\ &\because BD = x + x = 2x \\ &AC = 3x + 3 + 3x + 3 = 6x + 6 \end{aligned}$$

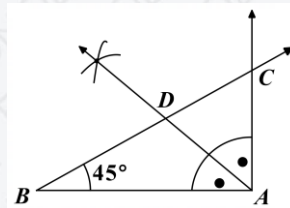
$$\therefore A = \frac{1}{2} \times d_1 \times d_2 = \frac{1}{2} \times 2x \times (6x + 6)$$

$$= x(6x + 6) = 6x^2 + 6x$$

*the numerical value of area at  $x = 7$*

$$6(7)^2 + 6 \times 7 = 294 + 42 = 336$$

- 2 Draw  $\triangle ABC$  where  $AB = 6 \text{ cm}$ ,  $m(\angle A) = 90^\circ$  and  $m(\angle B) = 45^\circ$ , then bisect  $\angle A$  with the bisector  $\overline{AD}$  which intersects  $\overline{BC}$  at point D. Determine the type of the triangle ABD according to the lengths of its sides.



*The triangle ABD is an isosceles.*

- 3 A card was drawn randomly from identical cards numbered from 4 to 11. Write the sample space then find each of the following two events.

1) Event (A) is the event of drawing a number divisible by 3

2) Event (B) is the event of drawing a number greater than 8

$$S = \{4, 5, 6, 7, 8, 9, 10, 11\}$$

$$A = \{6, 9\}$$

$$B = \{9, 10, 11\}$$

- 4 Find the area of a trapezium with two parallel bases  $7 \text{ cm}$ ,  $9 \text{ cm}$  and height of  $5 \text{ cm}$

$$\frac{1}{2}(b_1 + b_2) \times h$$

$$\frac{1}{2}(7 + 9) \times 5$$

$$\frac{1}{2} \times 16 \times 5 = 40 \text{ cm}^2$$

- 5 A trapezium has an area of 105 square centimeters and a height of 7 centimeters. If the ratio between the lengths of its two bases is 2:3. What is the length of each base?

$$\text{Area} = \frac{1}{2}(b_1 + b_2) \times h$$

$$105 = \frac{1}{2}(b_1 + b_2) \times 7$$



$$\therefore b_1 + b_2 = \frac{105}{3.5} = 30$$

$\therefore b_1 : b_2 : \text{the sum}$

$$2 : 3 : 5$$

$$? : ? : 30$$

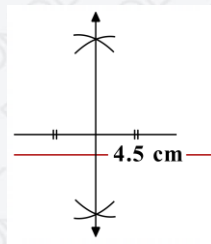
$$\therefore b_1 = \frac{2 \times 30}{5} = 12$$

$$b_2 = \frac{3 \times 30}{5} = 18$$

$\therefore$  The lengths of the two bases are *12cm and 18cm*

6

Draw a line segment of length 4.5 , then bisect it using a ruler and compass .



7

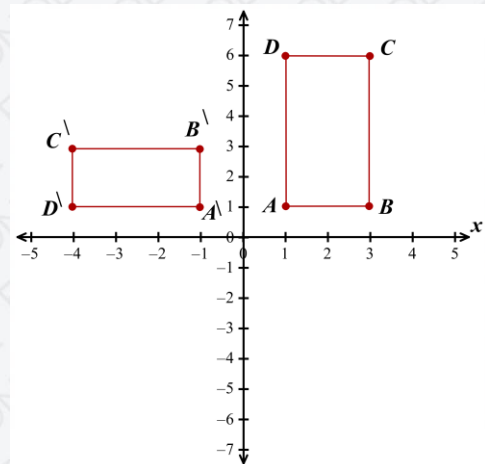
Draw on the grid , the rectangle ABCD  $A(1,1), B(3,1), C(3,6)$  and  $D(1,6)$  , then find its image by rotation  $R(0,90^\circ)$

$$A(1,1) \xrightarrow{R(0,90^\circ)} A'(-1,1)$$

$$B(3,1) \xrightarrow{R(0,90^\circ)} B'(-1,3)$$

$$C(3,6) \xrightarrow{R(0,90^\circ)} C'(-6,3)$$

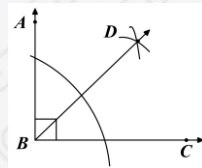
$$D(1,6) \xrightarrow{R(0,90^\circ)} D'(-6,1)$$





**Question 1 : Choose the correct answer :**

- 1 In the given figure:  
When bisecting  $\angle ABC$  with a compass ( $\angle ABD$ )
  - (a)  $35^\circ$
  - (b)  $45^\circ$
  - (c)  $90^\circ$
  - (d)  $180^\circ$
- 2 What is the image of the point  $(-2, 4)$  by rotation  $R(0, 90^\circ)$  followed by rotation  $R(0, 180^\circ)$ ?
  - (a)  $(-4, -2)$
  - (b)  $(4, -2)$
  - (c)  $(-4, 2)$
  - (d)  $(4, 2)$
- 3 In the experiment of tossing a fair coin 3 consecutive times and observing the upper face, what is the number of sample space elements?
  - (a) 2
  - (b) 4
  - (c) 8
  - (d) 16
- 4 What is the image of the point  $(4, -3)$  by reflection in the x-axis followed by reflection in the y-axis?
  - (a)  $(-4, 3)$
  - (b)  $(4, 3)$
  - (c)  $(-4, -3)$
  - (d)  $(-3, -4)$
- 5 A trapezium with an area of 162 square yards and the lengths of its two parallel bases are 17 yards and 19 yards, what is its height?
  - (a) 4.5 yards
  - (b) 8 yards
  - (c) 9 yards
  - (d) 18 yards
- 6 What is the image of point  $(3, 4)$  by translation  $(x, y) \rightarrow (x - y, y - 2)$ ?
  - (a)  $(2, 1)$
  - (b)  $(1, -2)$
  - (c)  $(-1, 2)$
  - (d)  $(-1, -2)$
- 7 A trapezium with an area of 320 square feet and a height of 16 feet, what is the length of its middle base?
  - (a) 16
  - (b) 20
  - (c) 40
  - (d) 60
- 8 What is the image of the point  $(7, -4)$  by translation of 5 units in the negative direction of the x-axis?
  - (a)  $(2, -9)$
  - (b)  $(7, -9)$
  - (c)  $(7, 1)$
  - (d)  $(2, -4)$
- 9 The image of the point ..... is the same point by reflection in the x-axis
  - (a)  $(-3, 0)$
  - (b)  $(0, 2)$
  - (c)  $(-4, 10)$
  - (d)  $(-2, -5)$



## Question 2 : Answer the following questions :

- ① Write the sample space for each of the following experiments indicating the number of its elements:
- 1) Experiment of forming a two – digit number from the set of digits  $\{2, 3, 4\}$
  - 2) Experiment of choosing a digit from the digits of the number **68753** randomly
- 1)  $s = \{22, 23, 24, 32, 33, 34, 42, 43, 44\}$   
 $n(s) = 9$
- 2)  $s = \{6, 8, 7, 5, 3\}$   
 $n(s) = 5$

- ② If the area of a rhombus is 120 square centimeters and the length of one of its diagonals is 10 cm , then find the length of the other diagonal

*∴ the area of the rhombus*

$$= \frac{1}{2} \times d_1 \times d_2$$

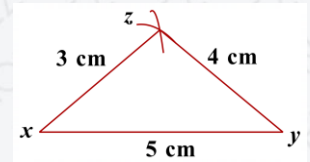
$$\therefore \frac{1}{2} \times 10 \times d_2 = 120$$

$$\therefore 5 \times d_2 = 120$$

$$\therefore d_2 = 120 \div 5 = 24 \text{ cm}$$

- ③ Draw  $\Delta xyz$  where  $xy = 5 \text{ cm}$  ,  $yz = 4 \text{ cm}$  , and  $xz = 3 \text{ cm}$  , then determine the type of triangle according to the measure of its angles

*From the drawing the triangle is a right angled triangle*



- ④ Draw  $\Delta ABC$  in the coordinate plane where  $A (-4, 1)$  ,  $B (-1, 1)$  ,  $C (-2, 3)$  , then draw its image by rotation  $R (0, 90^\circ)$  followed by rotation  $R (0, 180^\circ)$

$$A (-4, 1) \xrightarrow{R (0, 90^\circ)} A' (-1, -4)$$

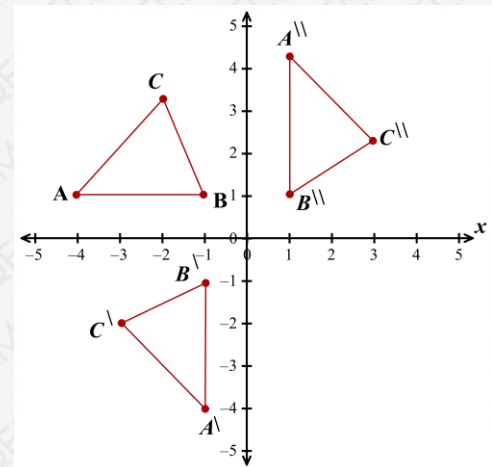
$$\xrightarrow{R (0, 180^\circ)} A'' (1, 4)$$

$$B (-1, 1) \xrightarrow{R (0, 90^\circ)} B' (-1, -1)$$

$$\xrightarrow{R (0, 180^\circ)} B'' (1, 1)$$

$$C (-2, 3) \xrightarrow{R (0, 90^\circ)} C' (-3, -2)$$

$$\xrightarrow{R (0, 180^\circ)} C'' (3, 2)$$





- 5 A square with a diagonal length of  $10x$  cm , calculate its area in terms of  $x$  , then find the numerical value of the area at  $x = 2$

$$\therefore \text{Area of square} = \frac{1}{2} d^2$$

$$= \frac{1}{2} (10x)^2$$

$$= \frac{1}{2} \times 100 x^2 = 50 x^2$$

$$\therefore \text{Area of the square} = 50 x^2 \text{ square cm}$$

$$\text{Numerical value of the area at } x = 2$$

$$50 (2)^2 = 50 \times 4 = 200$$

- 6 From the set of digits  $\{1, 2, 3\}$  form a number of two different digits. Write the sample space then find each of the following two events:

1) event  $A$  is the event that the sum of the two digits is less than 4

2) Event  $B$  is the event that the number is divisible by 2

$$s = \{12, 13, 21, 23, 31, 32\}$$

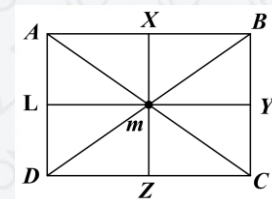
$$1) A = \{12, 21\}$$

$$2) B = \{12, 32\}$$

- 7 In the given figure  $ABCD$  is a square

find the image of the triangle  $MBX$

by rotation  $R (M, 90^\circ)$



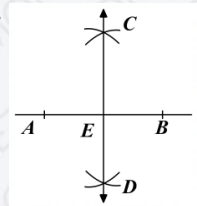
triangle  $MAL$

Model (5)

Question 1 : Choose the correct answer :

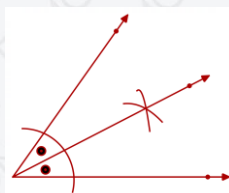
- 1 What is the rotation that makes the image of point  $A (2, 5)$  be  $A' (-5, 2)$
- (a)  $R (0, 180^\circ)$  (b)  $R (0, 90^\circ)$  (c)  $R (0, -90^\circ)$  (d)  $R (0, 360^\circ)$

- 2 The image of the point  $(2, 5)$  by reflection in the  $x$ -axis is .....
- (a)  $(5, 2)$  (b)  $(2, -5)$  (c)  $(-2, -5)$  (d)  $(-2, 5)$
- 3 The area of square with a diagonal length of  $12\text{ cm}$  ..... the area of a rhombus with diagonal lengths  $6\text{ cm}$ ,  $12\text{ cm}$
- (a)  $\leq$  (b)  $=$  (c)  $<$  (d)  $>$
- 4 The experiment of rolling a fair die 2 consecutive times, the number of times of appearing two numbers whose sum is 12 is .....
- (a) 1 (b) 6 (c) 12 (d) 36
- 5 The image of the point  $(3, -2)$  by translation  $(x, y) \rightarrow (x - 4, y + 3)$  is .....
- (a)  $(1, 1)$  (b)  $(-1, -1)$
- (c)  $(-1, 1)$  (d)  $(1, -1)$
- 6 The image of the point  $(3, 2)$  by a translation of 3 units downwards followed by a translation of 4 units to the right is .....
- (a)  $(0, 6)$  (b)  $(6, 0)$  (c)  $(7, -1)$  (d)  $(-1, -1)$
- 7 When bisecting the line segment  $\overline{AB}$  by a compass, you must have .....
- (a)  $Ac < \frac{1}{2} AB$  (b)  $Ac < AD$
- (c)  $Ac > \frac{1}{2} AB$  (d)  $Ac < AE$
- 8 What is the image of the point  $(2, -5)$  by rotation around the origin  $O$  with an angle of measure  $90^\circ$  anticlock wise?
- (a)  $(-5, -2)$  (b)  $(5, 2)$  (c)  $(-2, 5)$  (d)  $(2, -5)$
- 9 Drawing a coloured ball from box containing identical balls of unknown colours:
- (a) Random experiment (b) Not a random experiment
- (c) Impossible event (d) Certain event



### Question 2 : Answer the following questions :

- 1 Draw an angle of measure  $45^\circ$  and then bisect it using a ruler and compass





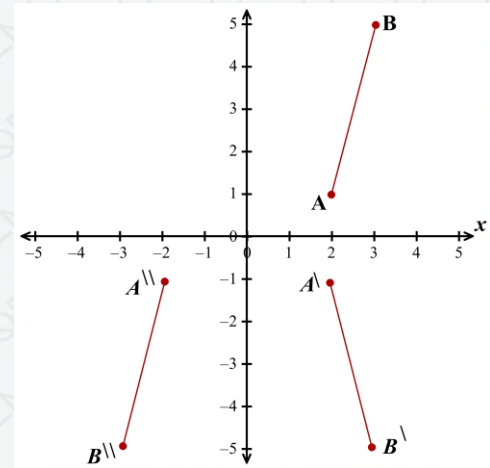
- 2 Draw  $\overline{AB}$  on a grid where  $A(2, 1)$ ,  $B(3, 5)$  and then draw its image under reflection in the  $x$ -axis followed by reflection in the  $y$ -axis

$$A(2, 1) \xrightarrow[\text{the } x\text{-axis}]{\text{by reflection in}} A'(2, -1)$$

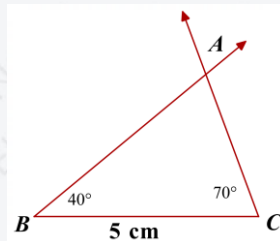
$$\xrightarrow[\text{the } y\text{-axis}]{\text{by reflection in}} A''(-2, -1)$$

$$B(3, 5) \xrightarrow[\text{the } x\text{-axis}]{\text{by reflection in}} B'(3, -5)$$

$$\xrightarrow[\text{the } y\text{-axis}]{\text{by reflection in}} B''(-3, -5)$$

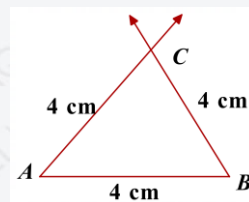


- 3 Draw the triangle  $ABC$  where  $m(\angle ABC) = 40^\circ$ ,  $m(\angle ACB) = 70^\circ$  and  $Bc = 5\text{ cm}$ , then determine by measuring the type of triangle according to the lengths of its sides



From the drawing, the triangle is an isosceles triangle where  $Bc = AB = 5\text{ cm}$

- 4 Draw an equilateral triangle  $ABC$  with side length of  $4\text{ cm}$



- 5 A bag contains 10 identical cards numbered from 1 to 10, one card is drawn randomly by write the following events:

- the event  $A$  of drawing number less than 4
- the event  $B$  of drawing odd number
- the event  $c$  of drawing number divisible by 5

$$\text{a) } A = \{1, 2, 3\}$$



$$b) B = \{1, 3, 5, 7, 9\}$$

$$c) \{5, 10\}$$

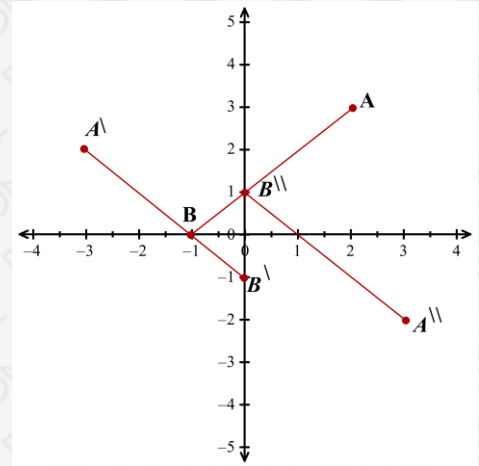
- 6 Draw the image of each of the two points  $A (2, 3)$  ,  $B (-1, 0)$  by rotation  $R (0, 90^\circ)$  followed by rotation  $R (0, 180^\circ)$

$$A (2, 3) \xrightarrow{R (0, 90^\circ)} A' (-3, 2)$$

$$\xrightarrow{R (0, 180^\circ)} A'' (3, -2)$$

$$B (-1, 0) \xrightarrow{R (0, 90^\circ)} B' (0, -1)$$

$$\xrightarrow{R (0, 180^\circ)} B'' (0, 1)$$

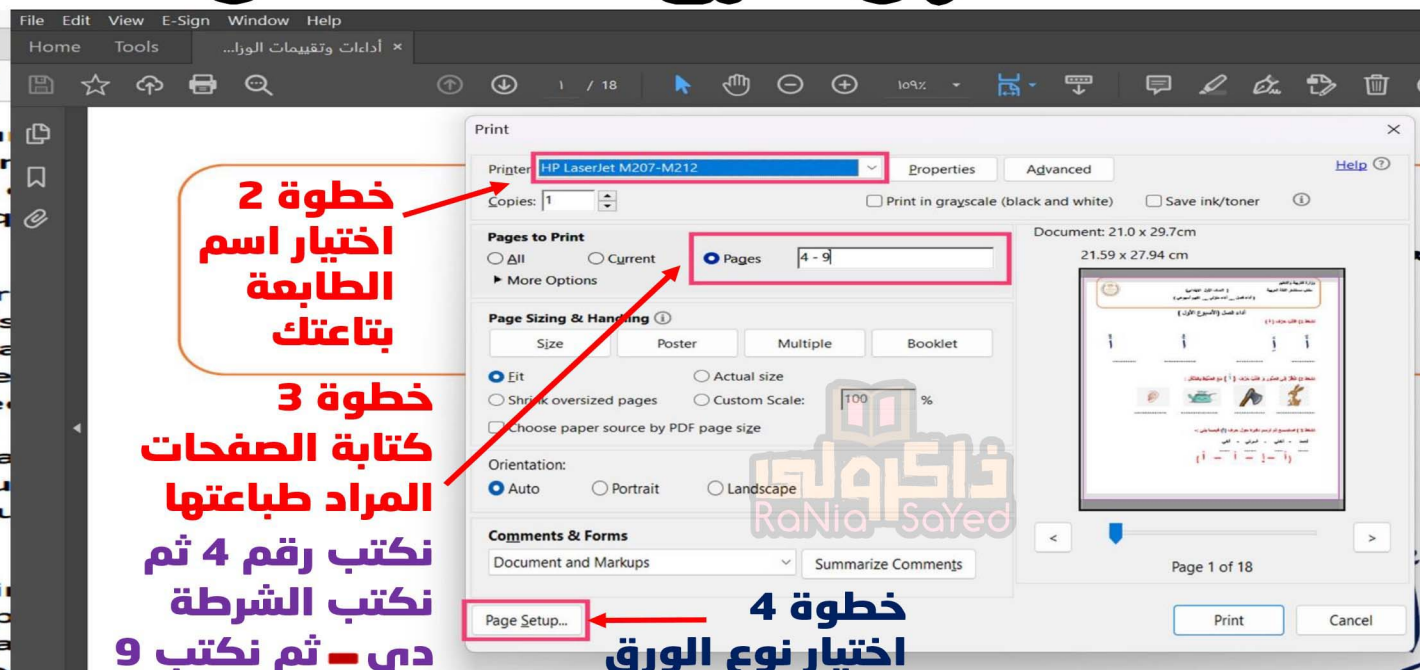


- 7 Complete :  
The image of the point  $(4, 5)$  under the translation  $(-2, 2)$  is .....  
 $(2, 7)$

# كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



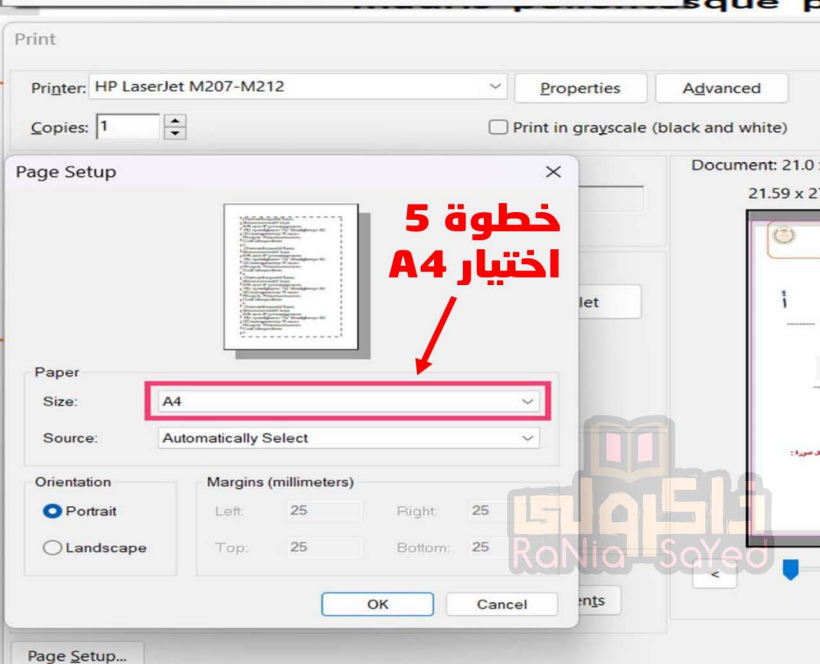
خطوة 1



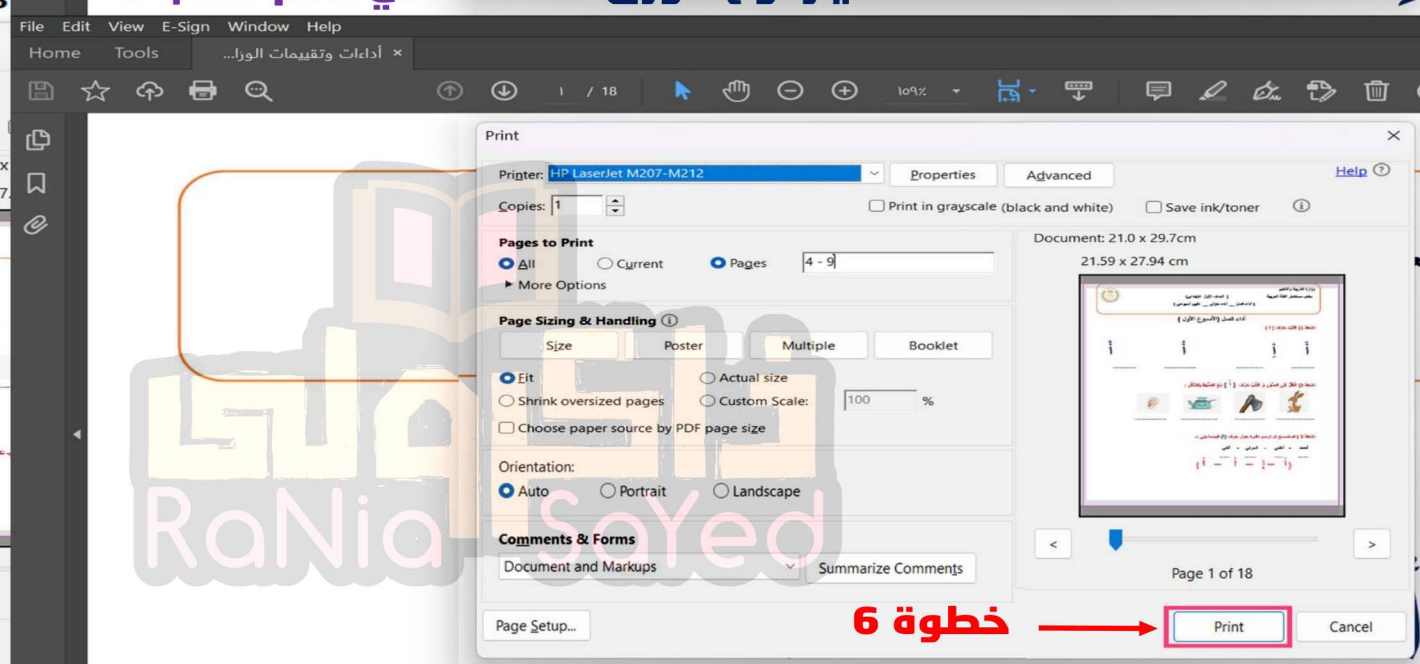
خطوة 2  
اختيار اسم  
الطابعة  
بتاعتك

خطوة 3  
كتابة الصفحات  
المراد طباعتها  
نكتب رقم 4 ثم  
نكتب الشرطة  
دي - ثم نكتب 9

خطوة 4  
اختيار نوع الورق



خطوة 5  
اختيار A4



خطوة 6